

CTO

The Magazine for Information

TRADING PRIVACY
FOR PROFIT:
DO YOU KNOW
THE RISKS?

PAGE 188

WHY WE LIKE
BLACK & VEATCH'S
I.T. SPINOFF—
DESPITE THE
LONG ODDS

PAGE 108

MOTOROLA:
IS THIS ANY
WAY TO BUILD
AN INTRANET?

PAGE 124

Tempted by the
allure of dotcoms?

LOOK
BEFORE YOU
LEAP!

PAGE 76

CIO ROBERT PAQUIN
jumped from L.L.Bean
to dotcom diamond seller
Blue Nile



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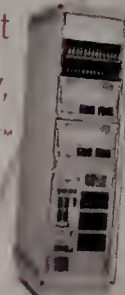
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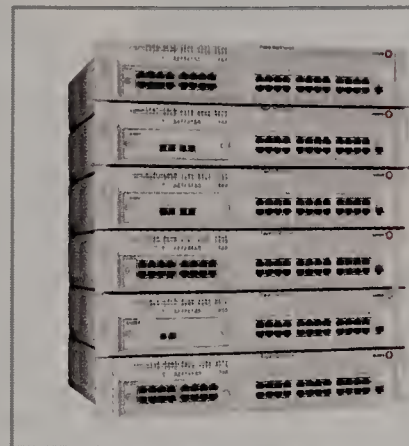
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Inside

VOL. 13 • NO. 12 • APRIL 1, 2000

Features

Wheel of Misfortune? 76

COVER STORY CAREER PATHS Before you gamble on a dotcom career, examine the odds. *By Stewart Deck*

End Game 98

CONVERSATIONS David Weinberger, coauthor of *The Cluetrain Manifesto*, talks about the impending death of corporate life as we know it. *By Emelie Rutherford*

Spin City 108

BUSINESS STRATEGIES An engineering firm premieres in the IT consulting world. But is this spin-off ready for prime time—or will it be just another rerun? *By Rebecca Lynch*

Is This Any Way to Build an Intranet? 124

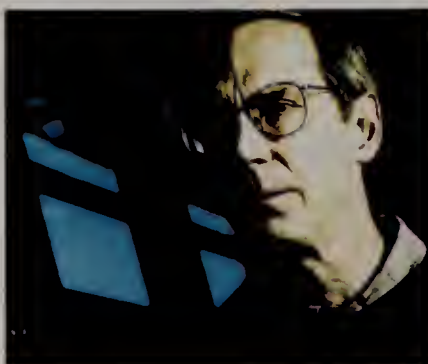
INTRANETS It took the good Lord six days, but Motorola decided to build a portal for 130,000 people in 50 countries in half that time. *By Emelie Rutherford*

Are You a Bad Boss? 140

MANAGEMENT Your best people are flying out the door left and right. Blame it on that internet startup down the street, but maybe you're the problem. *By Polly Schneider*

Law in Order 158

CASE FILES One law firm strives to transform scattered file cabinets into an online knowledge-sharing system. *By Meg Mitchell*



178



Debra Domeyer, CIO at CarsDirect.com, sought her position at the startup as a way to challenge herself and step up the pace. 76

Call to Action 166

INFORMATION DESIGN More isn't always better, especially when it comes to information. Here are eight essential steps to creating actionable information. *By Jane Linder and Drew Phelps*

Virtual Mentor 178

LEADERSHIP CIO brings together an IT veteran and a newcomer for a help session on influencing peers and staff in a time of restructuring. *By Richard Pastore*

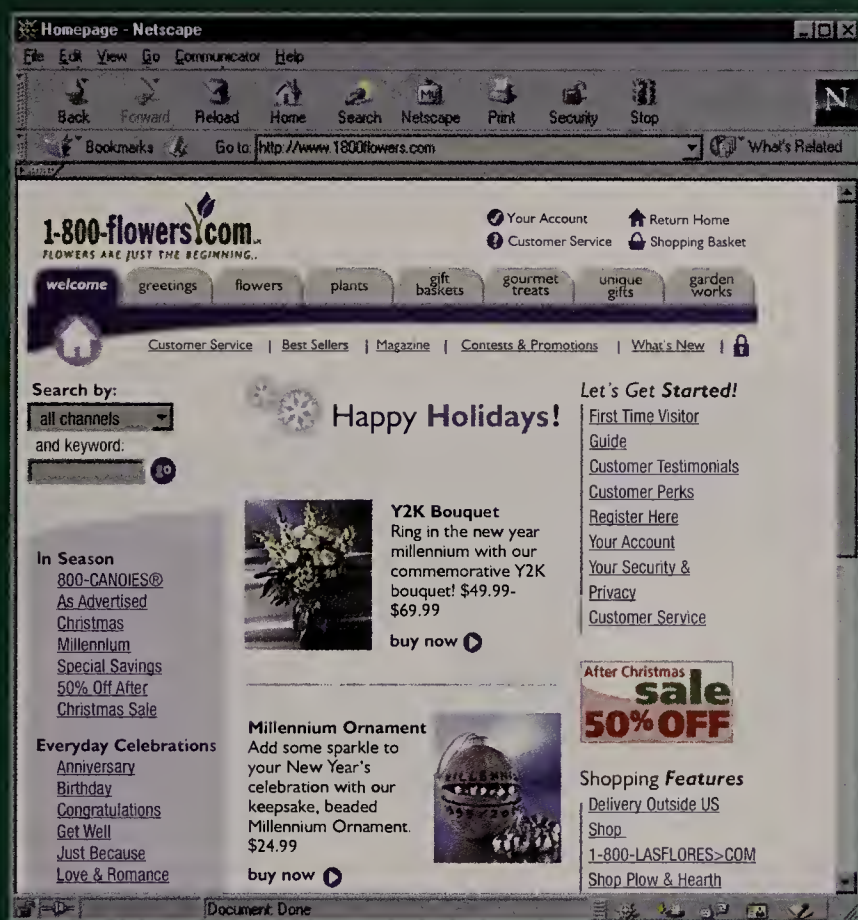
You Know What They Did Last Night 188

PRIVACY Your company knows all there is to know about your customers' preferences and patterns, but do your customers want you to be looking over their shoulders? *By Daintry Duffy*

Cover photo by Karen Moskowitz

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Inside

Columns

Nets Upon Nets 54

DAVENPORT Welcome to the new world of e-networks. And you thought reengineering was difficult.

By Thomas H. Davenport

Big Fish Seeking Small Pond 60

CAREER COUNSEL Mark Polansky offers advice to aspiring CIOs and IT managers.

Making Change 68

TOTAL LEADERSHIP Politics isn't just something you use to defend yourself—it can be the key to leading organizational change.

By Patricia M. Wallington

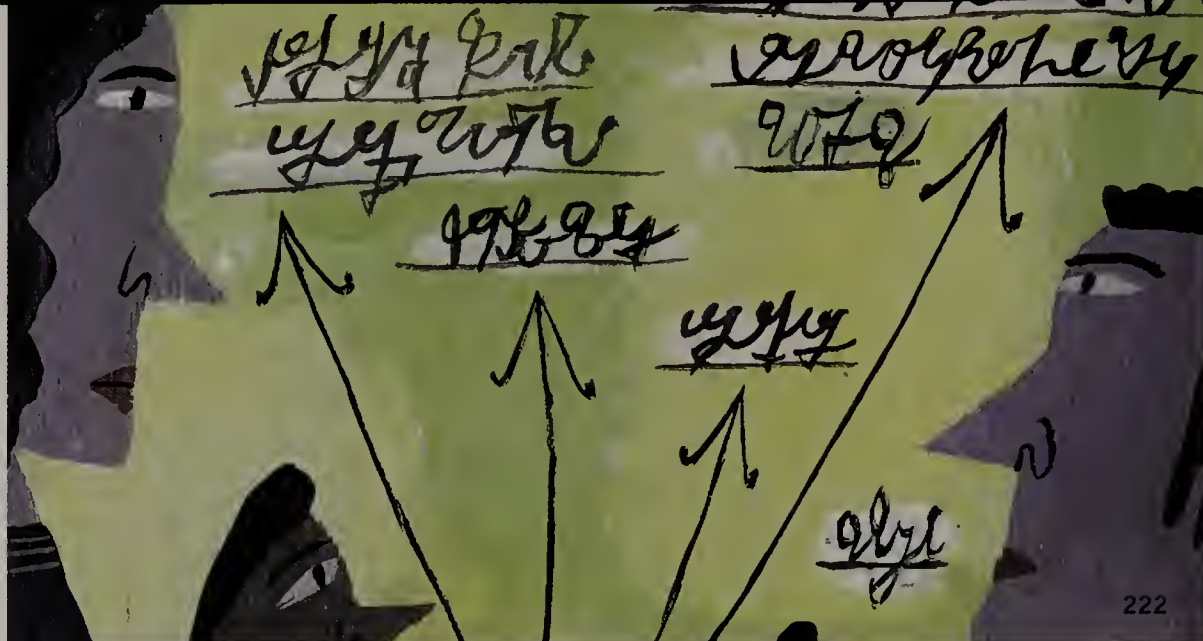
Turning Green 216

DIFFERENCE ENGINE IT can help save the planet and increase profits at the same time. *By Doug Barker*

Sheila Talton 248

INTERVIEW Learn about the challenges involved in advocating the advancement of women and minorities in high-tech.

By Polly Schneider



Opinion

Getting Personal 222

REALITY BYTES The privacy that erodes as a result of CIOs' technology choices could be their own.

By Meridith Levinson

Why Does Everyone Hate the IS Department? 226

SOUND OFF Taking sides on critical issues. *By Martha Heller*

Virtual Success 230

PLATFORM A 22-year-old CTO shows us how it's done. *By Dan Newsome*

A New Mandate 234

FROM THE PUBLISHER What does the future hold for internet access devices and PCs? *By Gary Beach*

In Every Issue

From the Editor 18

By Abbie Lundberg

InBox 22

Reader feedback

Trendlines 32

BY THE NUMBERS

Call center management

Compiled by Derek Slater 36

Emerging Technology 200

Small pipes, spotty networks and diverse devices bedevil developers of wireless applications.

By Megan Santosus

REVISIT CASE 208

PREDICTIONS B-to-B services 212

UNDER DEVELOPMENT New batteries 214

Board of Influence 239

ADVISERS When we don't know, this is who we ask.

Index 243

Portfolio 246

"I left Microsoft after I decided that free cappuccino didn't make up for the long hours, low pay and stress."

—Dan Newsome, CTO, Exigent Information Solutions 230



CORIO

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SECRETS TO SUCCESS: No. 098

Bob Duffy, CIO, HomeGrocer.com

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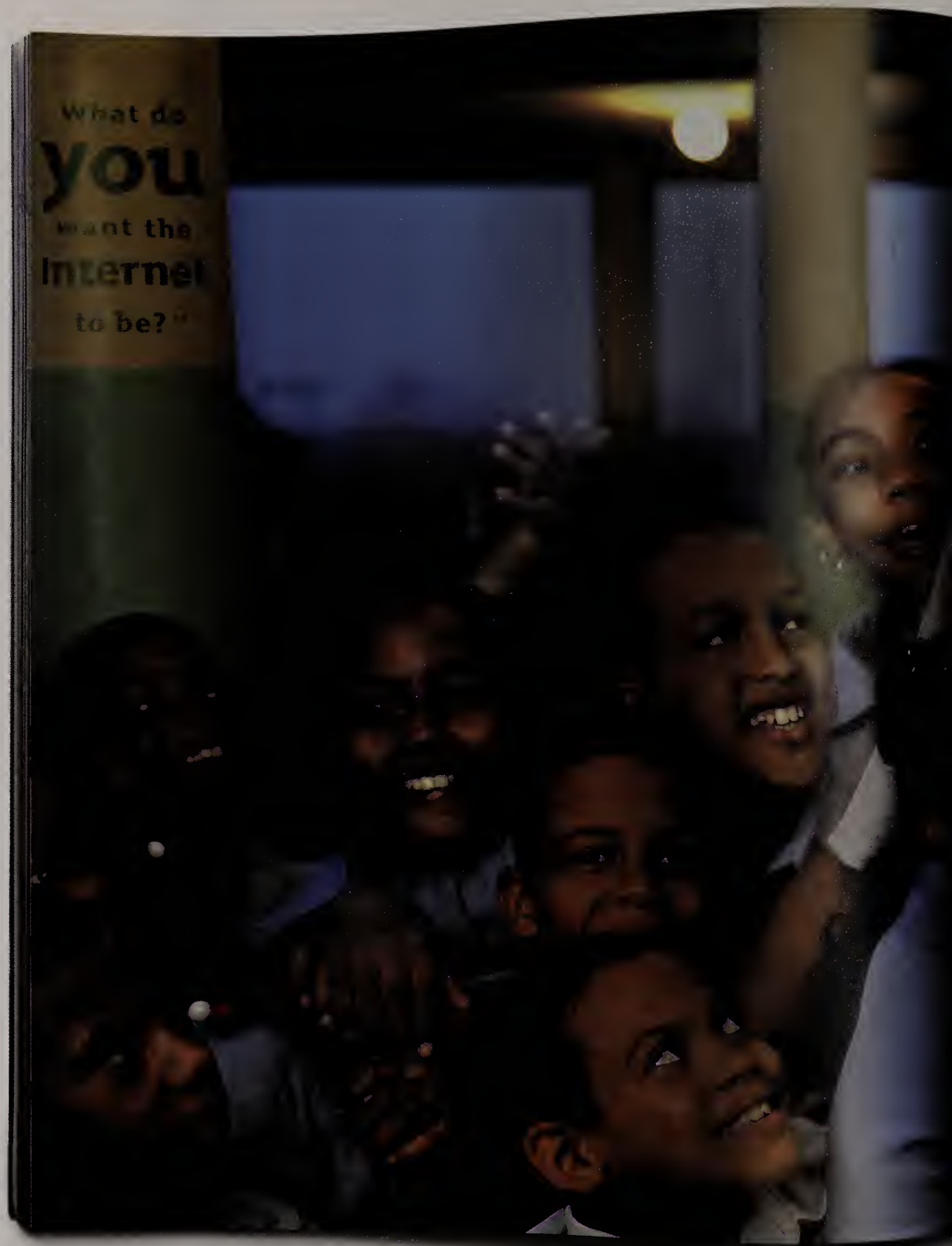
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“As long as the strategy is understood, communicated and internalized, any organizational structure can work.”

—Capital One Financial Group's Laura Olle,
on Ask the Expert
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From the Editor

lundberg@cio.com

Dotcom Millionaires and Wrestling Fans

A friend of mine got a call from a recruiter last year. He had a challenging job with a growing company whose mission he believed in. He enjoyed his work, and he had the kind of work-life balance that was important to him and his family. He really wasn't looking for a change.

Then the recruiter said the magic words: *Dotcom startup, backed by Kleiner Perkins, pre-IPO*. Ka-ching! You could almost see the dollar signs flash in his eyes.

The new job was nowhere near as interesting, and the hours would be grueling. He'd have to give up coaching basketball. He'd probably be working a lot of weekends for a while. But he'd get a 3 percent share....

How could he not make the leap? It might be a once-in-a-lifetime chance! Wouldn't he be failing his family if he didn't? Wouldn't he, in fact, be less of a man?

Our cover story, "Wheel of Misfortune?" by Stewart Deck, offers guidance in evaluating such new business opportunities. But before you take the plunge, there are certain questions you should ask about the company—and yourself.

The changing world is uprooting us all from once-cherished values and identity anchors. The changes affect more than the economic balance of power. They affect who we are, how we behave, what we expect (or desire), and who we choose to envy and emulate.

The "privileged" among us define success, keep our fears



at bay and establish our human identities against the economic benchmarks of rampantly growing wealth, bigger houses and upscale imported cars. Conversely, many of those with little access to the new economy's power structure rely on the equally extravagant codes of such popular institutions as the World Wrestling Federation (WWF), where (according to a recent article in *The Boston Globe*) "might makes right, with extreme violence defining how power is exercised." If you think this is hot air, just check out the playground behavior of 10-year-old boys who watch pro wrestling with their dads. Simulating what they see on TV, they act out the belief that (saith the *Globe*), "intimidation, humiliation, control and verbal aggression is the way that 'real men' prevail."

The fever to reap dotcom riches is no less a modern cartoon than the fabulous plotlines of villainy and triumph that stir the fans of the WWF. When the driving fantasies of a society are, on the one hand, to get filthy rich really quick or, on the other, to viciously knee-drop one's adversary into submission, something is haywire. TV shows like *Who Wants to Be a Millionaire?* and *WWF SmackDown*—are defining attributes of our time.

The question is not who wants to be a millionaire, but how badly, and at what costs? The serenity of our families, the civility of our discourse?

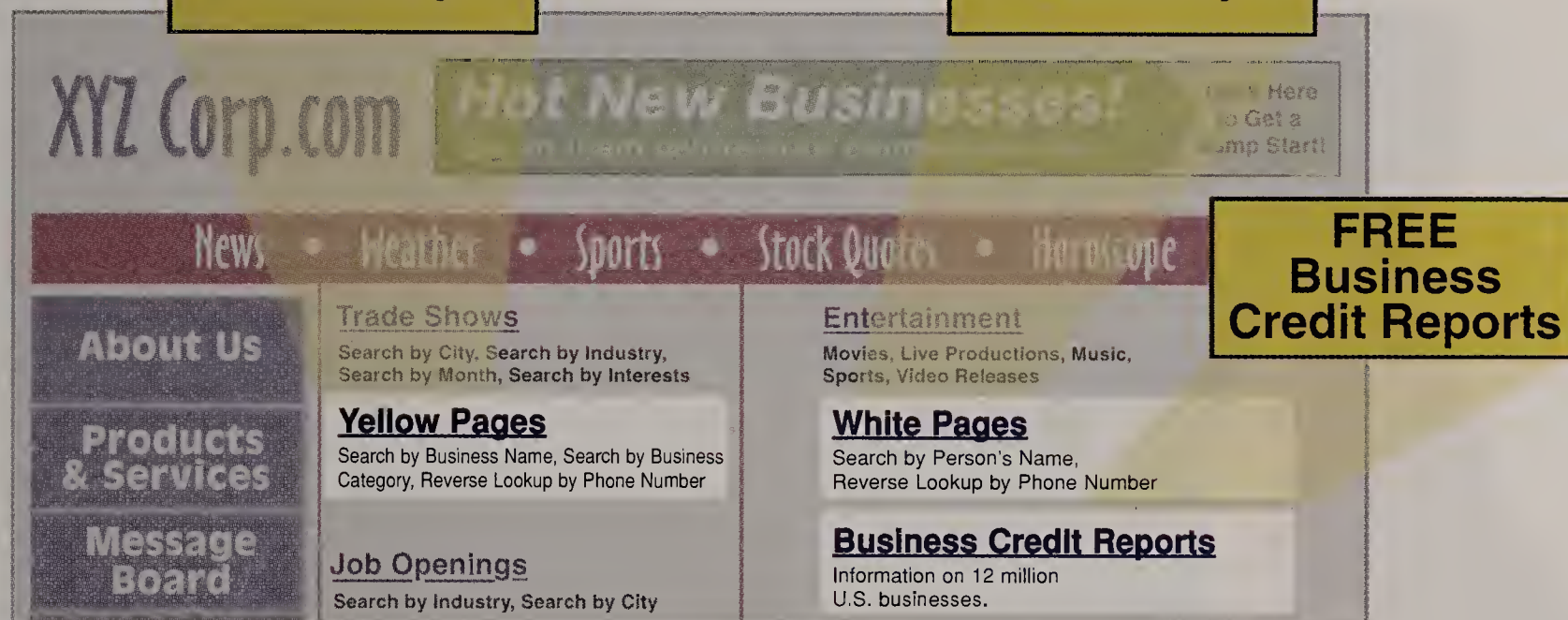
Allie Lundberg

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InBox

Reader Feedback

HITTING A NERVE

I'm writing in response to your Jan. 15, 2000, article, "Moving Up, Selling Out."

I was in the CIO/CTO role for many years before starting my own consulting firm. My sole aim in life is to prove that an "ethical consultant" is not an oxymoron, nor are the people who hire me morons. My firm is not affiliated with any vendor or partner, and it looks out for the interests of the customer (what a novel concept).

My biggest surprise as a CIO came when I was trying desperately to get approval for automated testing tools. The CEO of the firm said that "Bill Gates became a billionaire without testing his software. Why do we need to test ours?"

We were building applications that supported business-to-business e-commerce. You can imagine my plight.

Looking out for the Customer

Although I am a contract staffing agent, and I "sell" the people to correct the software problems you mentioned in "Moving Up, Selling Out" and not the software itself, I appreciated the view from "my clients" in regard to our practices. You see, to be quite honest, we have a new general manager who wants our organization to sell "like our competition." We are a small office with a nationwide company, and the salespeople in our office appreciated our former manager's ideals of being people and selling to people. I wish our new GM would understand that, and although I will probably be fired for doing it, I have forwarded your article to him in hopes that he may believe that other CIOs feel the same way.

I believe the client base I have established considers me for their

business needs because I do follow through with what I say I will do—even if it does leave me with a few less dollars in my pocket. There is an old line: Give a buck to make five, and it has always worked for me. I believe that every time I make a sale, I sell myself and my integrity. I take that home with me at night too. I would never sell a product in which I was not supported for making an ethical decision on. So far, my company stands behind me.

Integrity Intact

Anonymous replies: It's comforting to know you're out there. Given the state of our economy and the demand for people in our profession, it is far easier to find a new and better job than to recover one's lost integrity, so hang in there with your boss.

EDITOR'S NOTE

Our Jan. 15, 2000, CIO Confidential column, "Moving Up, Selling Out," by Anonymous hit a nerve with many readers. While we don't usually run anonymous letters, the importance of fairly representing the range of responses outweighed that policy.

Opinion CIO Confidential
Only the Names Have Been Changed

Moving Up, Selling Out

BY ANONYMOUS

THERE ARE DAYS WHEN I'd do this job for free and others when I'm sure they're not paying me enough. There are days when I feel like Superman, convinced that I'm the only thing standing between my company's success and its certain destruction, and days when I feel like a sellout.

As I write this, sales reps from a large software company are sitting in my conference room, waiting to see me. From here it looks like they're right or none, all sporting gang colors (black suits, white shirts, red ties), arranged around the table in proper pecking order and waiting up close for the "Willie I come in, it must be the man who says, 'The Jersey Sengsten has a sharp a deal groove.'"

Can you guess what kind of day I'm having? I know you could. One morning just woke up and realize that being promoted up the ranks of an information technology organization, while doing great things for your bank account, has the effect of making you further and further from the things that motivated you to the profession in the first place (programming in my case).

put on the God of Providence might eventually reveal to the world the precise point on the ladder where you suddenly become a complete incompetent.

What started as the beginning of my career as a very purposeful, straightforward, somewhat ordinary job as a crabsauce restaurant morphed into a word-smithing of adjectives, metaphors, similes, and all-meaning words with the life span of a mayfly and the meanest, most painful array of euphemisms and innuendoes to come on.

In 25 years, I've worked for four major companies and have always been associated in one way or another with the information technology department. In 12 years as a chief information officer, I've interacted with perhaps 200 CIOs from companies ranging widely in size and industry. In all that time, across all those IT departments, there is one bit of common wisdom to universal in how someone achieved "low of



I was actually laughing when I first started to read "Moving Up, Selling Out" because my secretary had just told me that my 10 a.m. meeting was ready to begin. I was meeting with a "pack 6" consulting group set up by our CFO to see if they could "offer us support for our next big IT project."

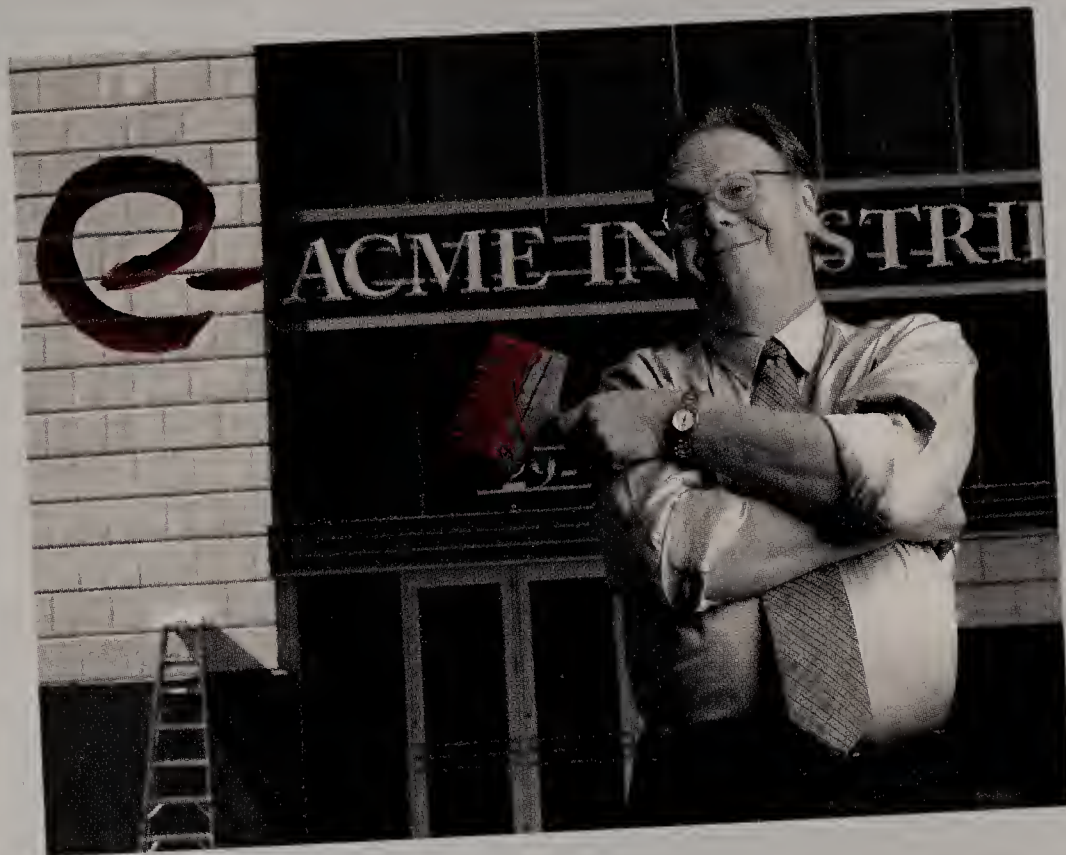
Well of course they could offer us support—anything from project management to actual conversion. Any surprise here?

It's hard not to get defensive or angry when they start questioning our approach to the project or telling us how experienced they are at this type of thing. What about my 25 years of experience?

Anyway, the game continues. The rules keep changing, and the suits keep coming!

Entertained in Rockford

Come on. You have to have, and want to have, the hype from those sales reps so that you have something positive to tell your boss. If you really meant what you said in your article, I would love to hear the conversation you would have with your boss. "Boss, the thing is, nothing really works. I know I am sup-



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We eat, sleep and drink this stuff.

posed to be a technologist, but I have no technical answer to our problems.”

We all know the story doesn't go that way. Let us know if you truly have the backbone to have that conversation one day because I want to be there. By the way, I am not a sales rep, but have been in operational outsourcing for years and have seen guys like you make silly decisions over and over.

An Operational Outsourcer

As someone who designs, formulates, writes and implements marketing, I try not to insult my prospects and clients with idiotic clichés and stereotypes, but I have to say that the media doesn't make it easy.

[Interview, *CIO*, Feb. 1, 2000].

My wife and I spend hours poring over recipes and wine collecting. My web time is spent hopping across many topics. If you want to win, you must establish a large community that can have many subcommunities, one of which might be about food and another about wine. But the winner must draw in the largest number of people and keep them interested the longest. Partnering and branching can achieve this.

Ray G. Moreau

Partner, Global Operate Group

Ernst & Young

Detroit

Ray.Moreau@ey.com

It's a shame that the most socially progressive nation to have ever existed on this planet continues to maintain one of the most regressive voting systems of any democracy today.

I took a call today with a supposedly learned analyst. I tried a new formula that I will call the “60 minutes” approach. All I did was spout off clichés and buzzwords rather than go deep into the riches of our technology, and at the end he thanked me for being concise!

Good luck with the vendors. Not all of us are out to sell you a bunch of crap.

John K. Thompson

Vice President, Worldwide Marketing

WhiteCross Systems

Chicago

john.k.thompson@whitecross.com

A FOOD AND WINE LOVER

I disagree with Yobie Benjamin who basically says that people don't have a passion for both wine and food

DIGITAL VOTING HAS HIS VOTE

I agree with your analysis in your publisher's letter of the major political parties' fear of electronic voting [“Digital Polls,” *CIO*, Feb. 1, 2000].

Simply put, the parties much prefer the status quo with a known number of registered voters, of which a consistent percentage will vote each presidential election (or state or local election). Internet voting potentially opens the flood gates to the 24 million 18 to 25 year olds, who both parties can't figure out and therefore would rather not have participate in the electoral process in large numbers. The same applies for the underclass (motor voter resistance).

Internet voting is not the only way to make voting easier for the average American citizen. For instance, why do

we have to vote on Tuesday? Why not Saturday, when more people would have time. And for that matter, why must voting occur only on one day. Why not a week-long period for voting? I think behind each of these questions is the same fear of the unknown by the major political parties that you eluded to in your article.

It's a shame that the most socially and technologically progressive nation to have ever existed on this planet continues to maintain one of the most regressive voting systems of any democracy today.

Charles Azu

Southfield, Mich.

PROMISING FUTURE

I completely disagree with your outlook on using technology and PCs for teaching our children, even the very young [“Baby Blues,” *CIO*, Feb. 1, 2000].

My daughter (who is now 4) began using a PC at 18 months and enjoys it as a form of entertainment and education. However, she also plays very well with her more conventional toys, has an amazing imagination and has proved to be very bright and eager to learn. Also, we actually spend more time together since I am a self-professed computer geek. I think that with a little balance in our lives, we can help our children excel in a world that is vastly different from the one we grew up in and spend quality time with them. Don't be so cynical about the future. Our children's lives hold much promise and excitement because of the advancement of technology.

Vanessa Grenier

empresvu@earthlink.com

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trendlines

the **NEW** the **HOT** the **UNEXPECTED**

Edited by Katherine Noyes

AGRICULTURE

A New World for Old MacDonald

YOU COULD SAY that John Mascoe is dripping with enthusiasm. But then, the North American sales manager for Vienna, Austria-based Adcon Telemetry is really excited about a new technology that helps farmers know when, where and how much to water their crops.

Adcon's addVantage system uses a combination of wireless in-ground probes and solar-powered radio transmitters to monitor air temperature, humidity, wind, rainfall and nearly a dozen more environmental conditions. The data is collected every 15 minutes and can be transmitted to any Windows PC located within a 45-mile radius. Previously, farmers either had to

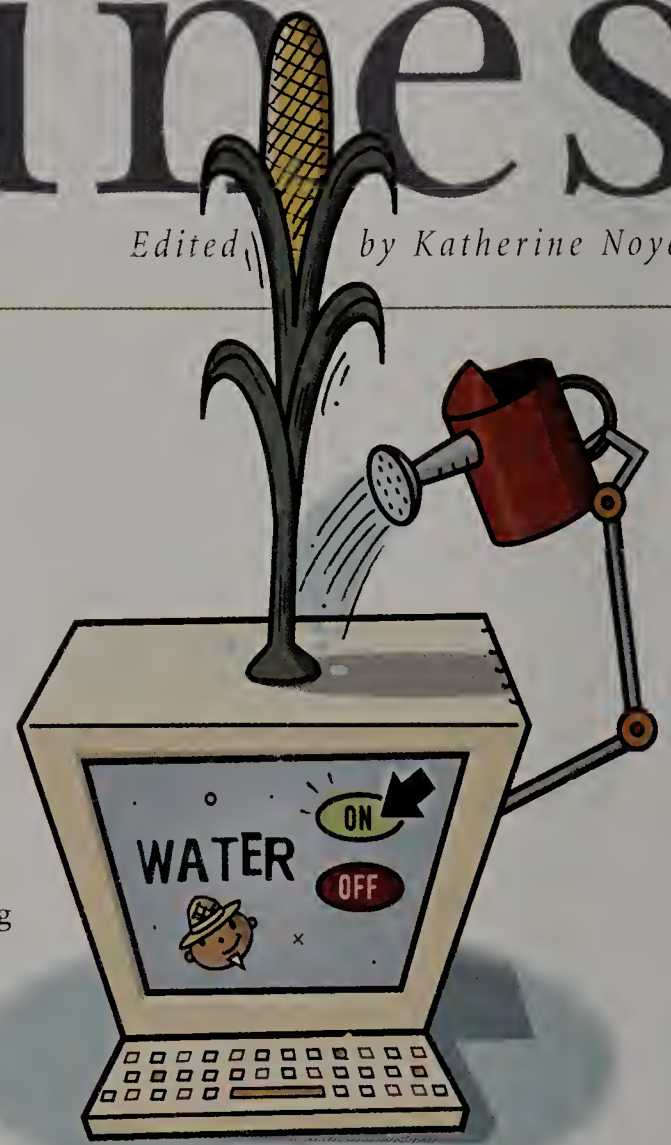
send someone out into the field to take readings manually or they had to install a cable-sensor system that could be damaged by plowing or storms.

The system is already in use in several states, including California vineyards that use it to monitor the irrigation of grapes. Software models developed by Adcon also interpret the data collected by addVantage to help grape growers combat threats posed by insects, fungus and other pests.

"The general perception of the farmer is someone in overalls driving a pickup

truck," says Mascoe. "But technology is rapidly moving agriculture into the wired world of the 21st century."

For more information, visit www.adcon.com.
—John Edwards



The new Techno Bra is a far cry from the lingerie of yesteryear.

SMART LINGERIE

Cross Your Heart

WATCH OUT MICROSOFT—Kursty Groves' wired bra gives new meaning to the term "tech support." The 26-year-old graduate of London's Royal College of Art is developing a smart brassiere that can detect if its wearer is attacked and will notify police if that happens.

Groves' Techno Bra is equipped with a heart-rate monitor, a global positioning system locator and components of a cell phone, all of which are discreetly concealed within removable gel pads. The bra is made of a special fabric that transmits the wearer's pulse to the monitor, which is sensitive enough to distinguish between changes in heart rate induced by physical activity and those from fear. Once the mon-

Continued on Page 34

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Cross Your Heart

Continued from Page 32

itor detects a sudden change in the wearer's heart beat, she has 30 seconds to deactivate the bra in the event of a false alarm. If not, a GPS satellite receives a signal, determines the location of the assault and dispatches a text message to local police or to a loved one's phone. "It will take some time before people accept the idea of being wired," says Groves. But she believes the Techno Bra will "enhance, not limit, its user's quality of life."

The Techno Bra (which clasps in front) can withstand any washing machine's spin cycle, so never mind the hassle of soaking your dainties in a sink full of Woolite. However, you must remove the electronics before tossing it in.

Groves expects her bras to be available by the end of 2001.

No word yet about matching Techno Knickers, but we'll keep you posted.

—Meridith Levinson

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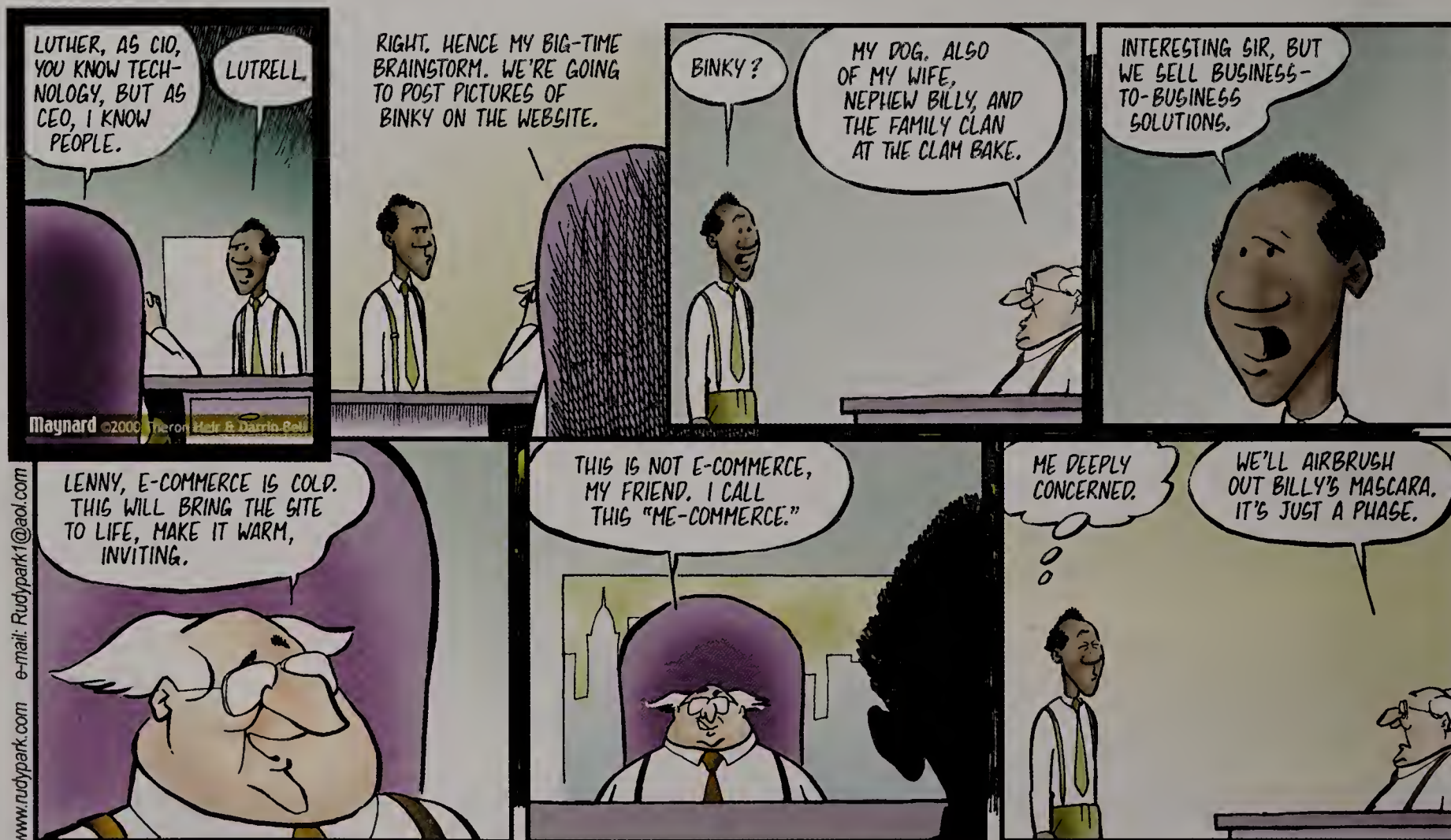
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The site is operated by GreaterGood.com. By the end of January, more than 9 million pounds of food had been donated. Donations are distributed through the United Nations World Food Program, which has projects in 80 countries.

Each visitor can donate once a day. One look at the site's world map, which dims a country each time someone there dies from hunger, and you'll want to make sure you do.

Maynard BY DARRIN BELL AND THERON HEIR



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By the Numbers

Compiled by
Derek Slater

Call Center Management Best Practices for IT

Capture

The most common—yet potentially misleading—metric for call center performance is average call duration. Longer average calls require more staff, and more staff costs more money—that's the usual logic. However, John Sansbury, head of the call center practice for Compass Management Consulting, notes that, for the most part, call duration depends on the caller and not the call center agent. And, in fact, overemphasizing call lengths in assessing agent performance can lead to poor customer service.

IT does play a pivotal role in reducing call duration by putting the right information on the agents' desktops with an intuitive, consolidated interface. Even better than making calls shorter, though, is eliminating unnecessary calls altogether. "You can make small gains with attention to average duration, but you get diminishing returns. Think how much better it would be if you could fix something in your organization that gets rid of 30 percent of the calls altogether," Sansbury says. For example, imagine that a large number of customers call back after placing an order to ask

when their purchase will arrive. Those calls can be cut out if the call center system prompts agents to give out ETA information at the end of every sale. Tacking an extra line onto the agent script is counter to the goal of cutting average call length, but in this instance it serves a greater good.

The key practice is to have the technology and process in place to capture what callers are actually asking for. Information systems should make

your call center the eyes and ears of the company, not just the mouth. Proper IT systems capture and summarize product and information requests, and let agents give their feedback and observations. Are your callers asking for yellow widgets instead of blue ones? Do customers need more information on the packing slip? Are the FAQs on your website missing a common question?

Correlate

Sansbury gives the example of an agent who consistently racked up the highest sales totals and won the monthly bonus as a result. Unfortunately that agent also had the highest return rate, because he made sales by overemphasizing the return policy: "If you're not satisfied completely, it's not a problem—just send it back." Counting the return rate, that agent would actually score as one of the least profitable performers in the call center. "You have to look at down-the-line costs associated with sales," Sansbury says. Information systems can automatically make these kinds of correlations.

COMPASS'S CALL CENTER "TRAFFIC LIGHTS"

AREA OF TESTING	Ineffective		Concern		Effective	
Average speed of answer in seconds	>55	45	35	25	15	5
Percentage of calls answered within 10 seconds	<50%	60%	70%	80%	90%	100%
Percentage of calls abandoned	>25%	20%	15%	10%	5%	1%
First call resolution rate	<50%	60%	70%	80%	90%	100%
Customer satisfaction percentage	<65%	70%	75%	80%	85%	90%
Staff turnover rate percentage	>30%	25%	20%	15%	10%	5%

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HOT TOPIC



I.T. VALUE

Sharing the Wealth

By Katherine Noyes

Proving the value of some IT investments is easy, but for

others it can be a bear. Infrastructure investments, in particular, can be difficult—you know they're necessary, but it's not always easy to find numbers that show it. That's because most companies leave out some critical elements when valuing infrastructure, argues Douglas Hubbard, principal for Glen Ellyn, Ill.-based Hubbard Ross, which specializes in applied information economics. *CIO* asked him to explain.

CIO: How do most companies value infrastructure investments today?

Hubbard: Either they're not doing it at all, or they're trying to make an argument entirely on the basis of IS productivity or TCO—meaning that it makes IS support people more productive, for example. The big piece they're missing is that the infrastructure is subsidizing other applications, but valuation of those applications does not incorporate the infrastructure costs. So the applications that use the infrastructure get to claim most benefits without reflecting all their costs. That's like leaving the cost of keyboards out of your application valuation and having to make a separate cost-benefit analysis for keyboards.

How should companies value these investments?

There are three methods they should use. First, continue looking at TCO considerations, because those are certainly valid.

Second, they should acknowledge that infrastructure often subsidizes applications and reflect that by allocating marginal costs to the applications. So if you have infrastructure costs that go up because of some application investment, the application should show those additional costs.

Finally, companies should use options theory in valuing their infrastructure investments. Increasing your capacity now gives you an option for dealing with unexpected growth—it gives you some flexibility and might let you avoid some costs in the future. So to justify an infrastructure investment, that basically boils down to multiplying the potential future cost avoidance by the probability of it occurring. That can be a pretty technical analysis, and many organizations will need the help of an options expert. But it's one that's well worth making, given that infrastructure investments are normally large. Companies should be prepared to conduct a serious analysis and to spend 1 percent to 2 percent of the total investment amount just on valuing it properly.

“THERE WILL BE A ‘COME TO JESUS!’ MOMENT WHEN THE PEOPLE OWNING ALL THIS BRICK AND MORTAR WILL REALIZE THEY'RE STUCK.”

—Retailing consultant J'Amy Owens, as quoted in *Inc.*, on the fate of malls after e-commerce



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HOT TOPIC



LEADERSHIP

Educating Rita... and Bob, and Jim

By Polly Schneider

As corporate hierarchies dissolve in the internet economy, companies are expecting more leadership from both seasoned and junior managers. In IT, for instance, managers must be able to lead

"laterally"—both inside *and* outside their organizations—as the number of outsourcing contracts and other alliances increases, says Michael Useem, professor of management at The Wharton School in Philadelphia.

There are a number of leadership education programs that can help, but many of them take more time than your average time-strapped manager has to spare. Not only that, but many programs are broadly focused and don't provide the real-world tools managers need. As a result, companies are increasingly looking for programs that are relatively short in duration and incorporate classroom learning with on-the-job projects.

Conoco's 3-year-old corporate university has a new program called Trailblazers that was developed about a year ago for the oil company's rising stars. Designed for the top 200 to 300 employees, Trailblazers puts managers through three

weeks of education over a nine-month period. Each class consists of 25 to 30 managers from all regions and disciplines of the company and requires them to bring a critical business challenge they currently face at work into the classroom. Over the nine months, managers take lessons they learn from the formal classes—a combination of business strategy and personal development sessions taught largely by outside experts from institutions such as the London Business School and the Center for Creative Leadership—back to the office to solve the challenges at hand.

Useem, meanwhile, who is director of Wharton's center for leadership and change management, teaches leadership courses for mid- and senior-level managers that run anywhere from three days to five weeks. CIOs account for about 8.5 percent of the student body. (For more on Wharton, see "Piggy Bank U," *CIO Enterprise*, Sept. 15, 1999.) Wharton sends instructors to company sites on request and focuses on replicating real-life experiences. Useem has even escorted classes to Mount Everest and to Civil War battlefields in Virginia. "The idea is to bring people to the proximity where life and death situations take place," he says.

"No one knows what a piece of the internet is really worth... but everyone's betting their patch is rich bottom-land.... The market will eventually sort it all out, but the land grab is on."

—Ranoy Kornisar, from *The Monk and the Riddle: The Education of a Silicon Valley Entrepreneur* (Harvard Business School Press, May 2000).

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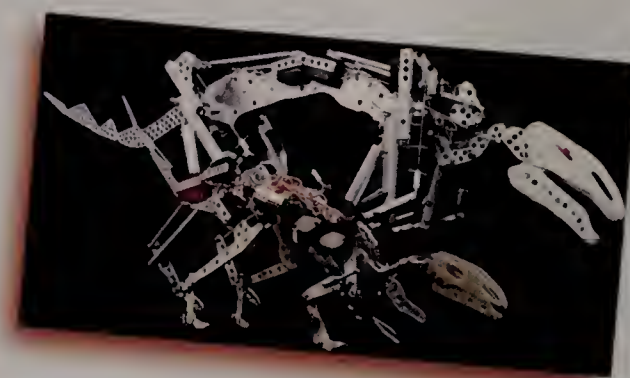
R O B O T S

Of Purrs and Grrrs

LAST YEAR SONY CORP. made headlines when it released Aibo, a robotic pet dog complete with artificial intelligence software that let it respond to human commands (see "Trendlines," *CIO*, Oct. 1, 1999). Now there's a feline counterpart for Aibo to chase—a robotic cat known as Tama, developed by Matsushita Electric Industrial Co. in Osaka, Japan. Not only is Tama cute and furry, but it needs no litter box. The life-size robocat automatically says

"Good morning," jumps, purrs and even delivers the local news when plugged into a phone line.

Speech recognition and sensors allow Tama to identify its owner. And that's integral to the goal of its development, which is to relieve stress for senior citizens in need of a companion. (Funding for development was provided by Japan's Association for Technical Aids.) The robot develops a familiar personality using autonomous agent technology.



This activates the robot automatically and initiates dialogue with its user. There is also a memory chip that stores recent information logs that can let nurses or doctors know when and how the robocat interacted with its user. Weighing a little over three pounds, the futuristic kitty runs on eight AA batteries, is scheduled for completion in 2001 and will cost approximately \$4,000.

Of course, once robotics entered the animal kingdom, it was only a matter of time before it began to venture beyond the household pet—in some cases, *way* beyond. To wit: The European Association for Research in Legged Robots (EARLR) is in the midst of re-creating the dinosaur age. EARLR's Palaiomation Project will replicate a 13-foot *Iguanodon artefieldensis* with a "robosaur" featuring multiple sensors and control systems that allow it to roam museums, chew on plants, blink, simulate breathing and interact with visitors.

"This is an exciting project," says Designer Vassilios Papantoniou, who works for EARLR in Lamia, Greece. "It requires and brings together expertise from many different fields, such as paleontology, biomechanics and robotics." The new attraction is currently half its ultimate size and has full power for about one hour. The full-scale dinobot is scheduled for completion in 2001. Visit www.earlr.gr.

—Kelli Botta

W O M E N

Good News...and Bad News

While the representation of women in corporate America has been steadily increasing, women are still poorly represented in the upper echelons of the business world. So says Catalyst, a nonprofit advisory organization based in New York City that works to enable women to achieve their full professional potential. Catalyst has been studying women corporate officers and top earners for the past five years, and the latest census, which looked at this group in Fortune 500 companies, revealed that in 1999 11.9 percent of corporate officers were women, up from 8.7 percent in 1995. And the number of companies with no women corporate officers decreased from 23 percent to 21 percent in the same period.

Yet even though women are making gains in the workplace, Catalyst found that overall women hold only 6.8 percent of line jobs (those with profit-and-loss or direct client responsibility), while men hold 93.2 percent.

Why the disparity? "We hear over and over again that the top barrier is stereotypes and preconceptions, not just about ability but also about commitment," says Katherine Tobin, the director of research and advisory studies for Catalyst who directed the census. Tobin points out that once a woman is married, the assumption is often that she is going to start having children and decrease her commitment to the company.

As a result, women more often find themselves steered toward staff positions like human resources and public relations.

"Staff jobs are not going to get you to the corner office," says Tobin.

"We encourage companies to take a look at where their women are and then open up some of the walls so that they can move beyond functional [positions]," says Tobin. —Meg Mitchell



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On The Move

Compiled
by Tom Field

Changes Brewing at Starbucks

TED DELLAVECCHIA, former CIO of Capital Blue Cross in Harrisburg, Pa., joined Seattle-based coffee retailer Starbucks in January as senior vice president and CIO. He replaces Debbi Gillotti, who will become senior VP and general manager of Starbucks X, a division that includes direct-to-consumer sales and other e-commerce initiatives.

Though a newcomer to retail sales, DellaVecchia has plenty of technology

and business experience. He championed e-commerce strategy at Capital Blue Cross, prior to which he was CIO of marketing, sales and services for IBM's then-new PC division.

DellaVecchia's new challenges are to maintain the projects and partnerships Gillotti initiated, and to help Starbucks expand globally.

"I've got to step into a fairly large set of shoes," says DellaVecchia, who was wooed to Starbucks by what he describes as the company's passion for growth. "Starbucks reminds me of some of my early career challenges at IBM, where we built the PC business. There is a similar passion, focus and commitment

to the work here. People love what they do, and it shows."

DellaVecchia has two immediate challenges. The first is staffing—the Pacific Northwest, in general, and Starbucks, in particular, is feeling the bite of the IS staffing shortage. As the new CIO, DellaVecchia has to set the tone for recruiting and retaining the best IT talent. To do this, he says he wants to be known as more of a people person than he has been in the past.

He also has to learn the nuts and bolts of Starbucks' business—retail sales, point-of-sale technology, food marketing. Toward this end, DellaVecchia is enrolled in Starbucks' vaunted immersion program, which places senior executives out in the field to learn the business from the ground up. He's already spent a week at a Pennsylvania roasting plant, and next he expects to be assigned to mixing brews at a Starbucks retail store. "I just hope I learn to make the best beverages I can," DellaVecchia says.



DellaVecchia



Player's Guide

Michael J. Day → **RSL Communications Ltd.**
has been promoted to CIO of RSL Communications of New York and Bermuda; previously, Day was the company's European director of billing and management information systems.

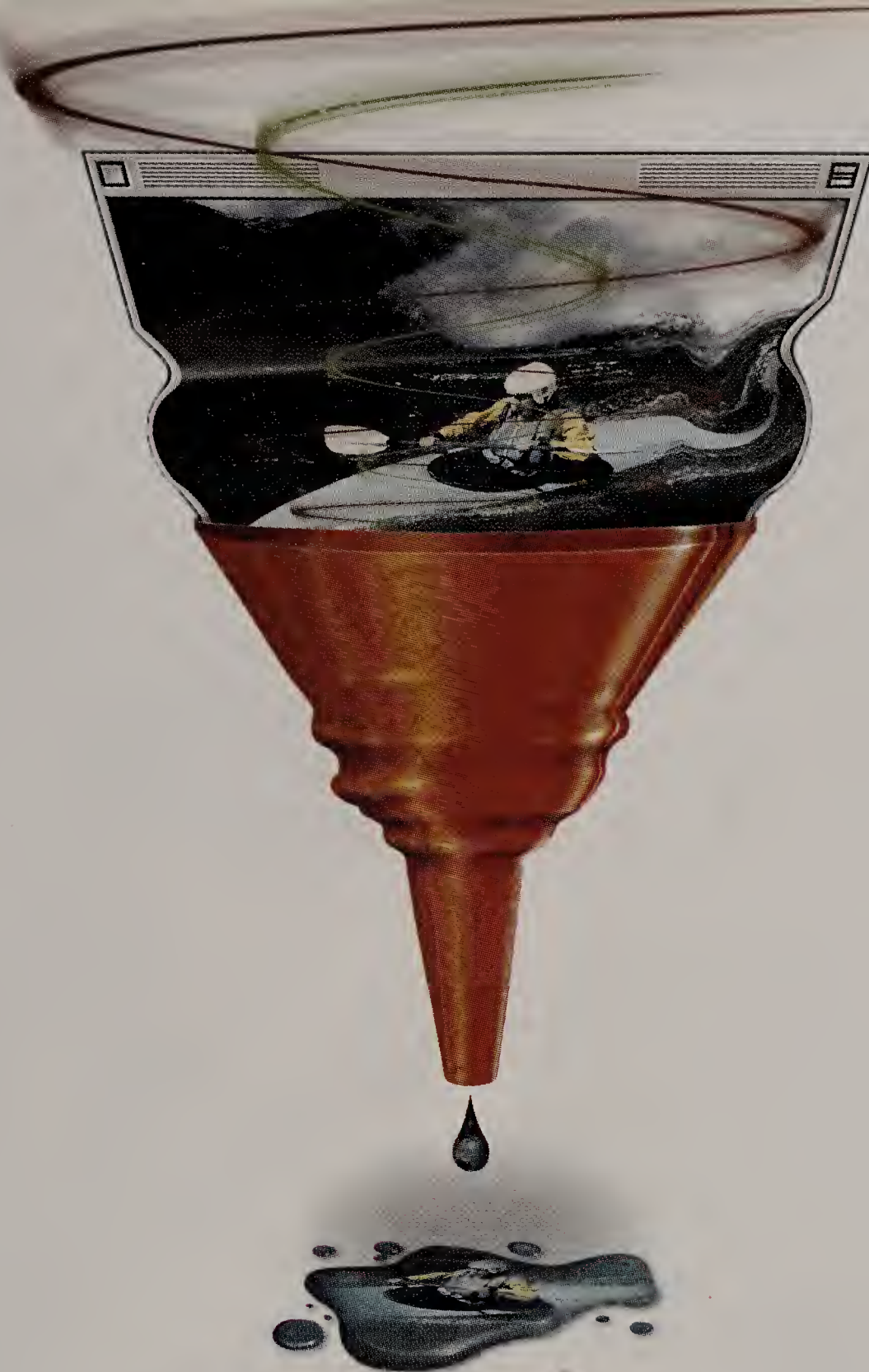
Keith Dennelly → **State Street Global Advisors**
has been named CTO of State Street Global Advisors, the investment management unit of Boston's State Street Corp.; Dennelly replaces John Fiore, who previously was named CIO.

George L. Frantz → **Park Electrochemical Corp.**
After nearly 26 years as an IT executive at Atlantic Richfield Co., Frantz joins Park Electrochemical of Lake Success, N.Y., as senior vice president and CIO.

Armand Morin → **Private Healthcare Systems Inc.**
has been named CIO of Private Healthcare Systems of Waltham, Mass.; interim CIO since last September, Morin is expected to bring his extensive IT and health-care experience to bear at PHCS, a managed health-care provider.

Zachary Patterson → **American Cancer Society**
is the new national CIO of the Atlanta-based American Cancer Society; formerly, Patterson was the CIO and commander of a U.S. Army Strategic Signal Brigade for the Military District of Washington, D.C.

Bruce D. Parker → **Sapient Corp.**
former CIO of United Airlines, joins Sapient as executive vice president; a member of Sapient's board of directors since 1995, Parker will lead corporate development and strategic growth initiatives for the Cambridge, Mass.-based e-services consultancy.



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I . T . H U M O R

They Just Keep Getting Stranger

I.T. PROFESSIONALS have long exchanged stories about the weird user requests they've heard, and it seems those bizarre requests just keep on coming despite the increasing prevalence of technology in modern life. RHI Consulting, a Menlo Park, Calif.-based consultancy, recently surveyed 470 IT professionals about the strangest requests they have ever heard. Among their responses were the following gems.

"How do I prevent the coffee cup holder (CD-ROM drive) from going back into the computer?"

"Please warn me the next time my computer is going to crash."

"Why doesn't my mouse work?"

(User was waving mouse in the air rather than using it on her desktop.)

"My large floppy is stuck in the small disk drive—how can I read it?"

(User had folded a 5-1/4 inch floppy in half and inserted it into the 3-1/2 inch disk drive.)

"How do I push those buttons on the screen?"

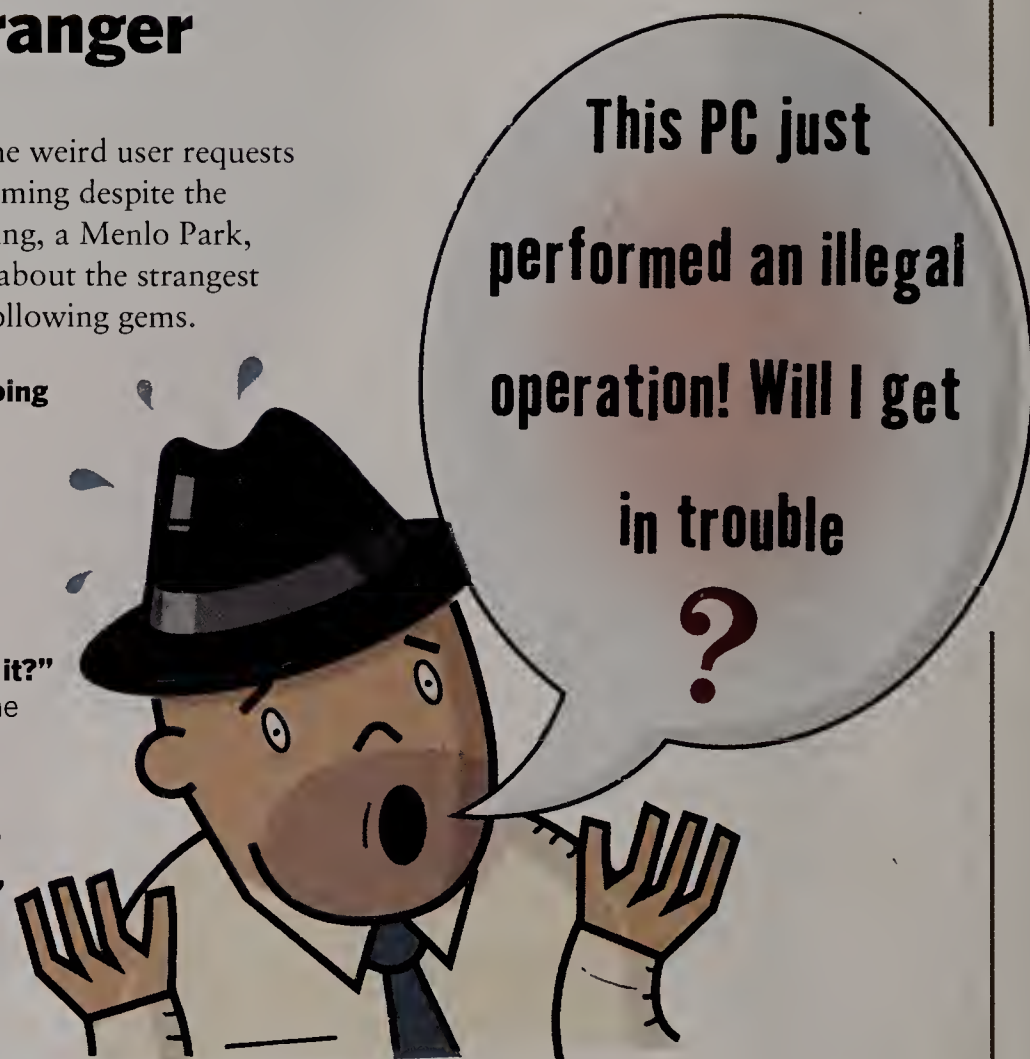
(User was unaware that the mouse was necessary for navigation.)

"Can you please help me open the shrink-wrap on my software?"

"Do I need to plug in my tape drive before I back up data?"

"I write 'click' but nothing is happening!"

(Help desk technician had asked end user to "right click.")



I N T E R N E T M O V I E

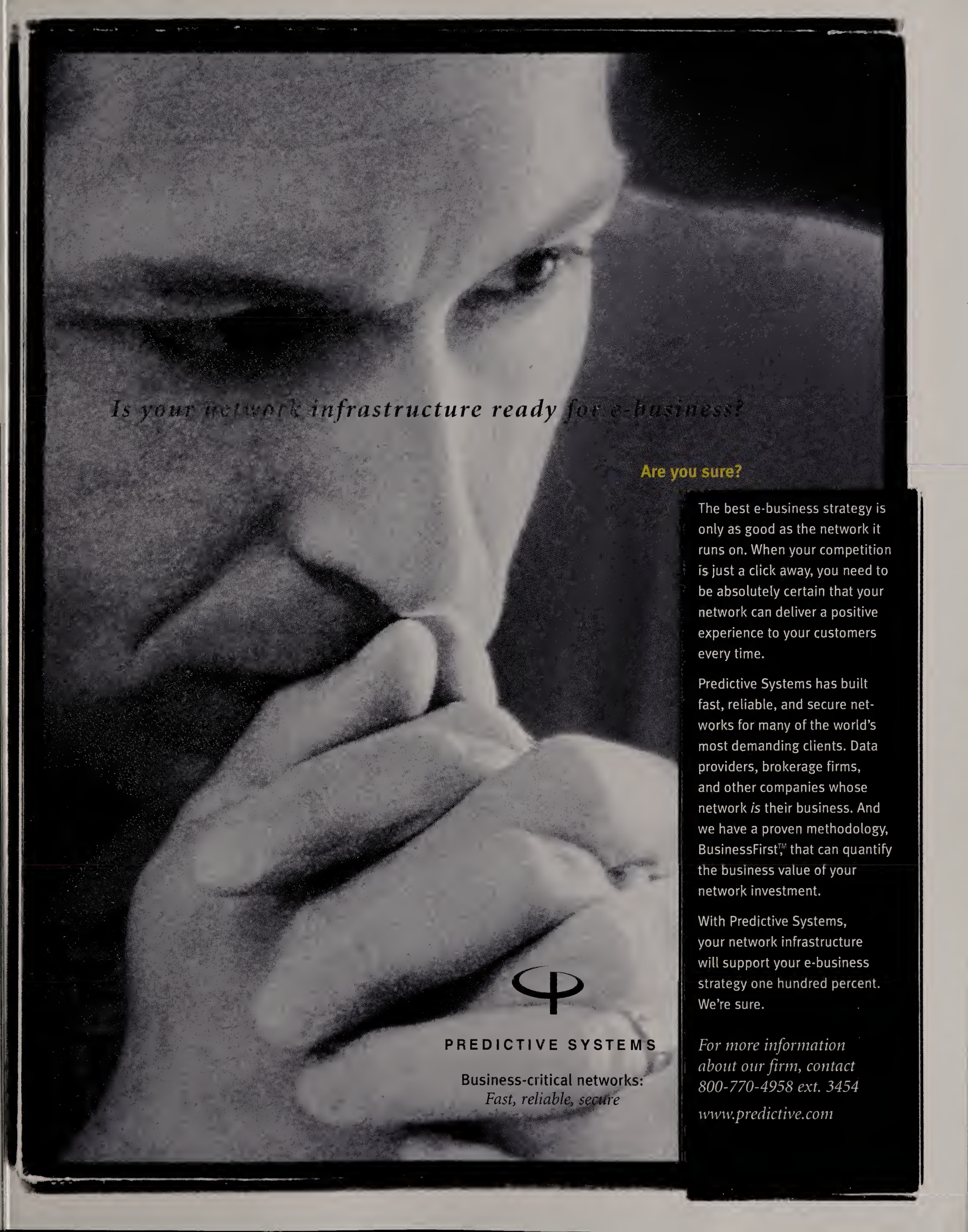
Coming Soon to a Monitor Near You

DO YOU LOVE MOVIES but hate competing for parking spaces and then paying through the nose for popcorn? If so, you're in for a treat: A new movie, set for release in May, will first be released on the internet. Called *The Quantum Project*, the film is being produced by Metafilmics, the company that produced *What Dreams May Come*. The movie tells the story of a physicist who has a mystical experience. It will run approximately 40 minutes.

The technology backbone enabling the

film's online release is being provided by online video store Sightsound.com, which used compression technology from Microsoft to make the files faster to download. According to Jennifer Pesci, marketing director for Sightsound.com in Mt. Lebanon, Pa., download times will vary depending on the speed of the internet connection, but high-speed users should be able to download the movie in 15 to 45 minutes. A one-day rental will cost \$2.95. For more information, visit www.sightsound.com.





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Davenport On...

Nets Upon Nets

Welcome to the new world of e-networks.
And you thought reengineering was difficult.

BY TOM DAVENPORT

I AM NORMALLY a little suspicious whenever I hear someone say that a technology is leading to new forms of social or corporate organization. After all, we've been hearing about the IT-enabled decline of hierarchy for a couple of decades yet I still find thicker carpeting in some parts of the headquarters building. The simplistic logic of "The decline of centralized IT leads to the decline of centralized power and control" never seemed very compelling, and there are many counter-examples. Certainly technology can change organizational cultures and structures, but it generally requires a long time-period and the alignment of several other factors.

However, I am tempted to throw my skepticism to the wind when it comes to the latest form of IT-enabled organizational change: internet-enabled business networks. The simplistic logic here goes, "Just as the internet is a network of networks, companies will be networks of networks as well." And by Jupiter, it seems to be coming true.

An e-network consists of three or more organizations that have a formal agreement to collaborate on some aspect of their business using the internet. Whether they're called e-networks,

business webs, value networks or whatever, they are exploding. They vary in terms of structure, function, size and composition. They can be used for supply chain functions, finance, marketing, R&D, HR and even IT. Some are B-to-B, some are B-to-C. Some are collections of old companies or new startups and can involve three companies or 30.

When we leave the realm of what we know, we get into supposition and extrapolation beyond what's going on today. That's where my skepticism rears its ugly head and tangles with my positive, visionary side.

The Network Skeptic

Sure, a lot of companies are forming networks. But isn't forming them easier than actually making them work? You have to wonder whether some of these e-networks will ever get past the press release stage. There is lots of hard, slogging work



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Davenport On...

involved in getting a critical mass of network partners and customers. And won't companies rebel at letting some other company get control of how their products and services are displayed and sold? The skeptic in me feels that perhaps the greatest beneficiaries from all this network activity will be the lawyers.

And what's the deal with MRO, anyway? MRO—maintenance, repair and operating—is the category of supplies for which many of these networks were created to ease procurement. But I've gone through several decades of life without getting excited about MRO, and I don't intend to start now. Sure, the world needs to buy this stuff, and it needs to do so efficiently, but even if you could procure industrial and office supplies by mental telepathy it would hardly constitute a revolution.

It's pretty clear that success in many of these networks will require integration of processes across companies. Another

If you're not a skeptic, you probably read the last paragraph and said, "Yeah, but XML will solve all of those problems." Right along with world hunger and global warming. XML is not going to eliminate the need for agreement on standards, and it is not going to prevent humans from having to discuss what "customer ID" means in your company versus mine.

The Visionary Speaks

The visionary can start by arguing that the XML glass is half full, not half empty. People will still need to talk, but XML is as close to a lingua franca for inter-organizational communications as we've ever had. Anyone with vision can see that it will increase the ability of one company to receive, process and act on another's information, with much less negotiation and structure than was required in the EDI days. Soon, virtually every computer application will suck in and spit out XML as a standard feature, and perhaps someday applications them-

selves will just be a collection of XML scripts. Every industry and sub-industry will have its defined XML schema.

Another aspect of the e-network vision relates to flexibility. Standards take a long time, and network compo-

sition will fluctuate, but tools are emerging that allow for flexibility and rapid modification of the technologies that enable networks, so companies can react easily to change. I recently visited a company called Bowstreet, for example, in Portsmouth, N.H. They produce a set of tools that allow rapid development and reconfiguration of XML-based network architectures. Bowstreet's offerings also allow companies to embed their web offerings within other companies' sites, leading to networks upon networks. This visionary envisions a high price for Bowstreet's stock at the company's IPO—and he wishes he had some.

And while the term "friction-free commerce" is a little far-fetched for even a visionary, I do think that commerce will get easier because of e-networks. Companies will be able to assemble "e-services" from multiple providers to offer value to customers. Providers will have many different web-based channels through which to distribute their products and services. IT capabilities will be found primarily in the network, and the idea of the "application" may become quaint.

I don't know about you, but I'm feeling like the visionary wins this one. **CIO**

Sure, a lot of companies are forming networks. But isn't forming them easier than actually making them work?

phrase for this is "inter-organizational reengineering." Still another phrase for this is "too hard." Remember how many companies failed at the "intra-organizational" form of reengineering? Think it gets any easier when the people who have to change their behavior don't even work for your company?

Then there's the standards thing. A lot of these networks are predicated on many companies agreeing to standard definitions of information and process. When was the last time that happened? Probably in the EDI era. And then it took as long as a decade for companies within an industry to agree on a lot fewer information entities than we're wrestling with now. Even if companies can agree, how will they get competitive advantage? I've heard that companies in RosettaNet, the electronics industry network, are starting to ask for the ability to offer proprietary information and processes on top of the standardized ones. There goes the neighborhood if that happens. Standards are a great thing in principle, but they're hard to develop and often run counter to human nature.

And what about clashes among networks? Most networks support particular industries, and you'd think that industries would be stable. But the skeptic is thinking that networks will begin to cross industries, either because the industries converge or because the network's owners want growth. I'm wondering, for example, what the members of the Acord insurance industry network are thinking about the decision of the Open Financial Exchange network (which involves Microsoft and Intuit as organizers) to add insurance transactions.

Thomas H. Davenport is a professor of management information systems at Boston University School of Management, director of the Andersen Consulting Institute for Strategic Change and a distinguished scholar in residence at Babson College. He welcomes reader comments at davenport@cio.com.



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Career Counsel

Mark Polansky Offers Advice to Aspiring CIOs and IT Managers

Big Fish Seeking Small Pond

Q: I have had what I consider to be a progressive career with two large Canadian companies (30,000 and 50,000 employees). This has provided me great experience leading both infrastructure and application development teams. However, I would like to switch to a smaller company in the United States to further my career goals. How do I position that on a résumé, while at the same time indicating current areas of responsibility (\$40 million annual budget) and demonstrating that I will not be bored, which is typically expressed as a concern?

A: The resistance that you have encountered is very natural. When a candidate expresses interest in changing a fundamental career characteristic—be it geography, industry, scope of responsibility or whatever—a flag goes up in the mind of a search consultant or prospective employer that says: risk factor. This kind of issue should not be addressed directly in a résumé but rather in your cover letters and personal conversations with interviewers. Having said that, there is a simple but effective way that your résumé can help. Highlight examples of your experience and accomplishments where you worked closely with smaller, intra-entrepreneurial business units within the bigger organization, and worked one-on-one with business unit management to help them achieve their goals. Then refer to



these examples in your letters and interviews as reasons why you are motivated to work in a smaller environment—where you can be more intimately involved in what's happening and have a more direct impact. And you can also invoke the “bigger fish, smaller pond” cliché.

SELLING YOURSELF

Q: I have recently been promoted twice in one year—from senior systems engineer to manager to director. For the better part of last year I have worked 16-hour days, involved chiefly in the business operations of our company. But the overall experience has been a tough, long haul, especially when it came to informing our company's users about the benefits of technology. However, more opportunity is available because we have recently merged our international and domestic operations into one combined unit.

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Career Counsel

There has never been a CIO in our company. I currently report to the CFO, who is a very wise and experienced woman. She recognizes my hard work and long hours and appreciates that I was able to get our corporate headquarters up to Y2K compliancy. I have also introduced a million-dollar client to our agency and have another waiting in the wings. How do you think I should best bring up the idea of my becoming CIO? Although it has been a relatively short time, I believe that I am the most qualified candidate.

A: First, sell the CIO concept and then sell yourself. If, as you say, your CFO is truly a wise and experienced woman, you should be able to convince her that your company would benefit from having a CIO. Have her read the appropriate litera-

on investment is pretty good, they won't take the plunge. Should I hang in there and continue to try to drive this company forward, or should I search elsewhere? Also, how can I make up lost ground when I stepped down from a director position to my current one?

A: It sounds like you should cut your losses and move on. That the company hired you at all is quite curious and probably contains some very important interviewing lessons about due diligence on both sides. Did the hiring superior—presumably your boss—tell you that the company's transition was on the agenda? And did you state your interests clearly at the interview? Did you interview, more than just a courtesy hello, with your superior's boss? As to the "lost ground" issue, it's hard

to tell from your question, but you may have made a necessary trade-off of level and title versus the commercial experience you will gain. If not, then perhaps you have undersold yourself. The best thing to do is get some objective advice from industry-based IT executives or search consultants.

Only a very small percentage of startups become viable and sustainable enterprises, and most entrepreneurs underestimate the capital and time requirements imperative to launching a new business.

ture, such as *CIO* and selected *Fortune* and *Business Week* articles, or attend industry events and speak to the CFOs at other companies who have successfully engaged a CIO. You can also show her studies on the subject such as Korn/Ferry International's "The Changing Role of the Chief Information Officer" (reviewed at www.cio.com/forums/executive/kornferry.html). Then, use her as your ally to get the message out to management—that IT can produce cost-saving operating efficiencies as well as competitive advantage through speed to market, better sales information and superior client knowledge. Lastly, suggest that you are the right person for the job for the reasons you have cited.

MOVING MISTAKE

Q: I recently left a director-level position with the U.S. government to pursue opportunities in the private sector. However, I may have made a strategic error. I accepted a position as a senior IT architect at a company that is very manual-labor oriented but appeared to be poised to make a strategic technical leap to increase profit margins and gain competitive advantage. I intended to provide the vision and impetus for that leap and ride the wave to the top.

Unfortunately, the company's senior management is from the old school and has failed to see the strategic advantage that being an industry leader and innovator in information technology brings. Although they all agree that an 800 percent return

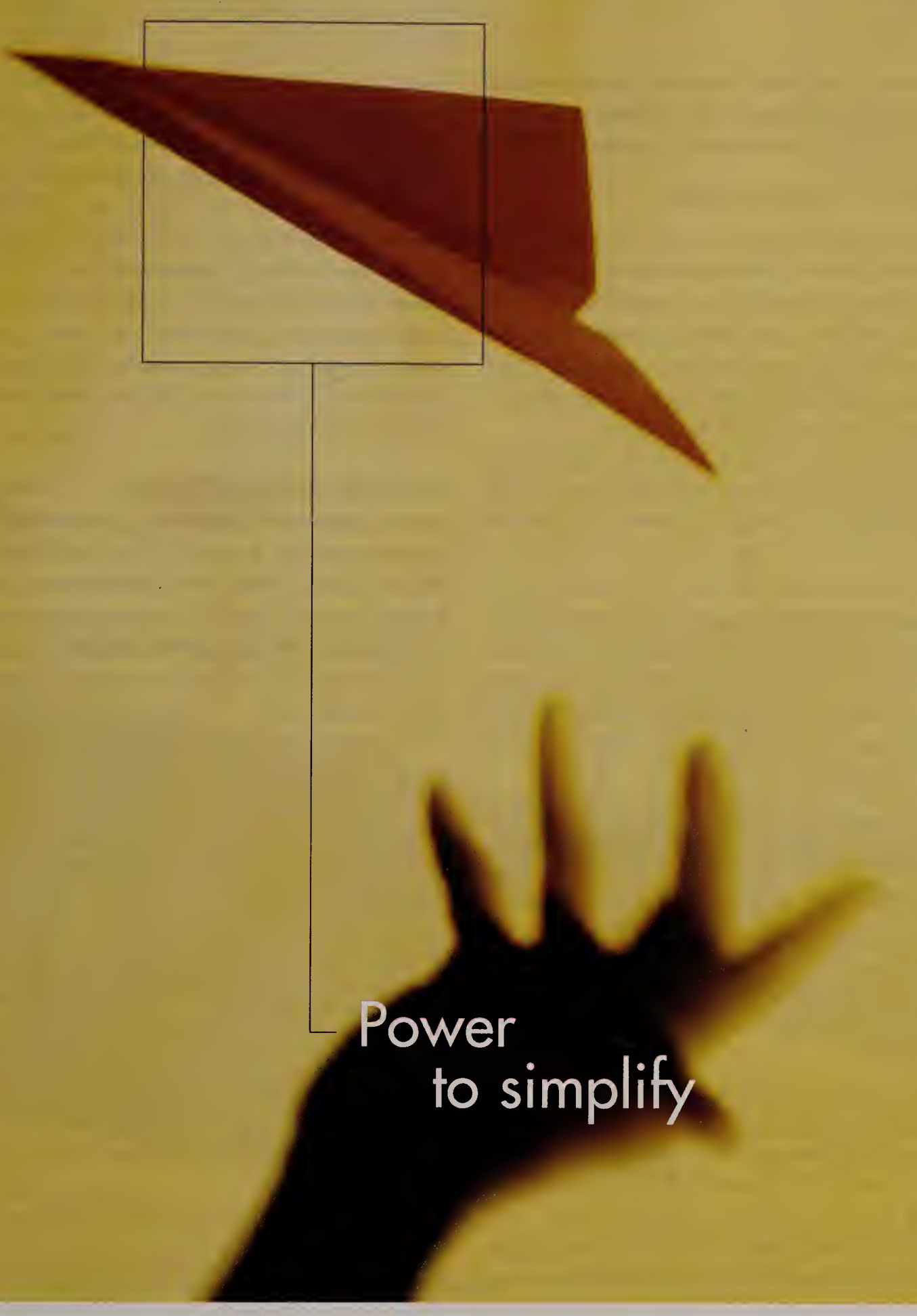
Q: I'm an IT consultant who has worked for nearly five years with clients like Compaq, IBM and HP. I've also started a corporation over the internet for joint development, and during the last two years I have received great response from the internet community. I'm also talking to a few investors about this project. Jumping into this venture full time will take me right from consultant to the top management position. I've thought about it over and over again, and every time I think of taking a permanent senior position, my inner self puts on the brakes and directs me to work on the other project. Is this the right thing to do?

A: Follow your heart and "to thine own self be true." You seem to have a real entrepreneurial passion for your idea, and it would be a shame if you spent the rest of your life looking back and wondering, What if? But be prepared—only a very small percentage of startups become viable and sustainable enterprises, and most entrepreneurs underestimate the capital and time requirements imperative to launching a new business. Make sure you have the personal resources and fortitude to make it through the process, and go for it.

LEAVING THE IVORY TOWER

Q: How can an existing CIO (myself) further explore CIO job opportunities? I manage a sizable IT department (\$28 million budget with 300 FTEs) but have reached the top. I work for a

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Career Counsel

large university, but I would like to explore my value outside of higher education. I am very good at what I do, but I'm not aware of how to market it. Do you know how to contact executive search firms?

A: As a CIO in academia looking to make the switch into industry, the first step is to craft a great two-page business résumé—not a 10-page curriculum vitae. Summarize your credentials but leave off the myriad citations of publications, lectures, presentations and grants, and instead emphasize your enterprise-oriented accomplishments. Get some trusted business executives, both IT and non-IT, to review it.

Second, keep your eye on the important public sources of position announcements and advertisements—but remember that only a fraction of CIO and IT director openings are advertised.

Third, make contact with a select group of search consultants who are well known for their work recruiting chief information officers. There are many directories of executive recruiters, for example. The one available from Kennedy Information (www.kennedypub.com) is particularly helpful because it is indexed by industry and functional specialties as well as

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by geography. You will find it in the reference section of most good public libraries, or purchase a copy—it's expensive but indispensable to an organized search.

JOB-HOPPER

Q: I have 12 years of IT experience, an MBA from a good school, three completed SAP projects, and I can't get ahead. I made the move to a Fortune 50 company a year ago. I was promised a management position in the office of the CIO but was relegated to staff status as the SAP project I was to lead was abandoned just as I came on board. I stayed at my last jobs six years, three years and two years. My job evaluation has been very positive, but I'm managing development projects—not people and process. In my last position, I had a staff of 12 to 20 working for me. I'm sending out résumés but have received no response. Is it too soon to leave my job?

A: As a general rule, it is never too soon to change employers if you are truly unhappy and have no internal options avail-

able to you—life is too short and the market is too hot to be miserable. Having said that, you may be jumping the gun. I simply must believe that a progressive Fortune 50 company will always have a need for strong, accomplished IT managers.

So I suggest you try to sit down with your managers and ask them for the truth about your current and future roles and opportunities within the organization. And then think this situation through very carefully. As far as your résumé mail campaign is concerned, your readers are simply reacting to the short tenure of your current position. If you decide to leave, a mailed résumé alone won't be able to overcome the first impression of a job-hopper.

HEY, WHAT ABOUT ME, BOSS?

Q: I am a first-level manager with a company that emphasizes current technology in support of its business in the service industry. I have an MBA with an emphasis in IT management. I went to graduate school not only to complement my technical background with management skills and training, but I also went back to school to prepare myself for advancement to senior management.

I feel that I am underutilized in my current position and that my services to this company can be of great value. I also feel that there is potential for career advancement with this company. What do you suggest, and how should I professionally strategize this without telling my manager how I feel about my current position?

A: You are on the right track but traveling in the wrong direction. You must sit down with your current superior and/or other company management and discuss with them the contribution that you feel prepared to make. You also need to talk with them about your career goals and your future. Hopefully you will receive their candid assessment of your ability to make that contribution and of your promotion potential at the company.

If you like what you hear, stick to it and make it happen. If you are disappointed, and don't like what they tell you, then get a second opinion—and even a third and fourth opinion—from trusted third parties (not your friends or relatives) and be prepared to take the necessary actions to get to where you want to be—through personal and professional change and growth. **CIO**

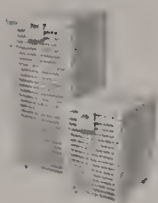
Mark Polansky is a managing director and member of the advanced technology practice in the New York City office of Korn/Ferry International. The web-based Executive Career Counselor column is edited by Web Research Editor Kathleen Kotwica. She can be reached at kkotwica@cio.com.



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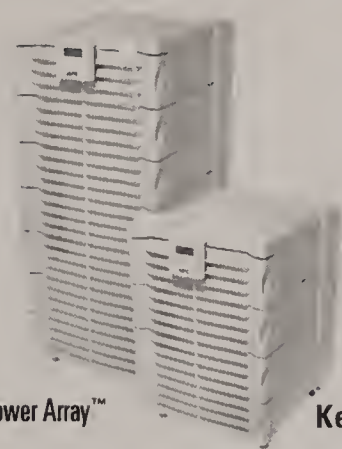
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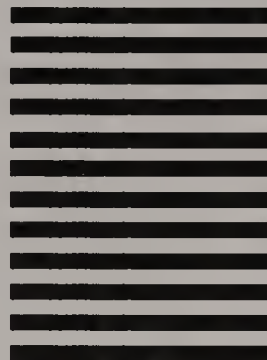
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Making Change

Politics isn't just something you use to defend yourself—it can be the key to leading organizational change

BY PATRICIA M. WALLINGTON

HAVE YOU EVER seen anyone try to make an omelet without cracking an egg? Sure you have! It happens every time a company decides it wants to be different without actually doing anything differently. Everyone agrees with the change at its conceptual stage, with an unstated assumption that it will affect only other people.

Yet it often falls to the CIO to make the change happen regardless. So how can you be an effective leader of change, maximizing the opportunities and minimizing the pain?

Last month's column discussed the inevitability of change and the steps necessary to establish a strong political foundation—the defensive use of politics (see “Playing Defense,” *CIO*, March 1, 2000). But politics can be positive! Now let's talk about politics' “offensive” uses—how to make it work for us, how to use the best techniques of politics to bring about organizational change.

Start by pretending you are a political candidate (in this season of presidential politics, that should be easy!), and imagine the elements you'd need to succeed in your campaign for change....



The Platform

This is the broad, bold vision and strategy you could not risk undertaking without the political foundation already established. Consider it your platform, and craft it carefully. At Xerox, when we decided to completely change our infrastructure, we related the drawbacks of the current state to the specific business direction the company wanted to pursue. We then described the new environment and how it would enable the company to make the changes it needed to be competitive. In developing your platform, be sure to incorporate the needs of the multiple constituencies and the inevitable question of “what's in it for me?”

The Campaign

This is your plan for inspiring and motivating others to join your pursuit of change. A good idea unimplemented is of no

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more value than a bad idea. So lighting the spark that excites others to take on the vision as their own is what differentiates the winners from the losers. Communicate often to your constituencies: executives, the field, corporate staff, the project team, the steering committee, the whole company. Use multiple media approaches: slides, videos, personal speeches and newsletters. This is really public relations! I actually have one vision that was put to music by a creative team who took my enthusiasm literally.

Keep your theme consistent. Did you know that during times of stress people need to hear things six times before the unfiltered message gets through?

Lighting the spark that excites others to take on the vision as their own is what differentiates the winners from the losers.

Meanwhile, make sure you carefully recruit your campaign workers, who will be your project team and project sponsors as well as the steering committee. This can involve getting informal champions throughout the organization who can help keep the spark alive.

Early Endorsements

Reaching critical mass, or a state in which enough change has already occurred so that falling back to the prior state is not an option, is sometimes difficult in a major change project. The tendency to cling to the old is strong, and the unproven nature of the new creates a paralyzing inertia. Pilots are a great way to get some momentum and break through the inertia.

At Xerox, we replaced a robust, but not mobile, infrastructure with industry-standard technology. It was a wrenching change—at one point we were actually accused of “balkanizing the company”—but it was critical to the future of the business. One thing that helped our effort was that early on, one division president literally pulled the plug on the old system and mandated the use of the new system.

Seek out your own early adopters. If you’ve formed the critical relationships necessary to pull off a big change, you should already know who they are. Form partnerships and give them as much support as you possibly can—and then give more. They help you build momentum, credibility and experience.

Polls

What’s the general perception of the project’s progress? Take time to count the votes continuously. What are the sponsors and others thinking? Do not assume that the enthusiasm of

the early days will be sustained without constant reinforcement. Know who your allies are and communicate with them frequently. Don’t let them hear important news through the “hallway talk.”

Election Day

Election day, the committed implementation date, comes whether you’re ready or not. Make time your ally. Those last steps in the plan can be invigorating as everyone focuses on the target. Know when to go for speed, when to slow down. Know the consequences of each and be prepared to deal with them promptly. Don’t implement if there are significant known problems, but also don’t let nits hold you back. Contingency plans and risk mitigation are key. Have clear-cut go and no-go decision points.

The Candidate

As the candidate in this campaign for change, you may thrive on the intensity and pace of these initiatives. Nevertheless, it is critical that you make the effort to keep yourself strong physically and emotionally. The amount of negative energy generated in major change projects can be debilitating. Develop some external influences; join a professional organization and attend the meetings, speak at conferences, do something you enjoy. These activities can reduce stress, add to your internal influence and help you stay objective.

Be visible to all constituencies. Now is not the time to hunker down in the office. Heads up, eyes open, ears alert will give you a good sense of how things are being received.

Keep your passion for the cause, but don’t lose your flexibility. See your positions as written in the sand. Allow yourself the flexibility to reexamine your beliefs in light of the current knowledge. It will amaze you how often you will want to modify a position.

Express your appreciation of your supporters and your team. Recognize them in tangible and intangible ways. Say thank you often, verbally and in writing. Hold events that celebrate their interim successes, give small tokens of your appreciation.

The Other Candidates

Almost certainly you will have some antagonists. These will behave much the same way as the other candidates in an election campaign. Be prepared to use some of the defensive tactics of politics. No matter how well planned the campaign, you will be a target. Don’t take it personally.

During a major project that was organizationally traumatic, one executive advised me to ask myself three questions:

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Am I doing it in the right way?

If you can say yes to all three, walk the path with confidence. Politics can be a lonely life.

shift, expectations change. That's why the political process is a continuous one. You can't just do it once and consider it done.

The political process is a continuous one. You can't just do it once and consider it done.

The Post-Election Period

The post-election period is striking in its similarity to the implementation phase of a project. Now it's time to make the campaign promises come true. Expect chaos—that way you can plan for it. The expectations at this stage, pent up through the previous phases, generally exceed your ability to meet them. Some days nothing seems to work as planned. People need to know what's coming, when and why. Conduct informal communications sessions, assign one of your team members to each major user community to keep them informed. Use newsletters, videos and paycheck stuffers. Be creative.

Reorganizations occur, businesses are acquired, alliances

In politics, the next campaign starts the day after the election. Following your own successful campaign, you will be focused on the minutia of implementation. But you will need to balance those activities with many of the same activities we started with—another campaign plan.

Presidential elections occur once every four years. Yours will occur much more frequently.

Get ready—here we go again. **CIO**

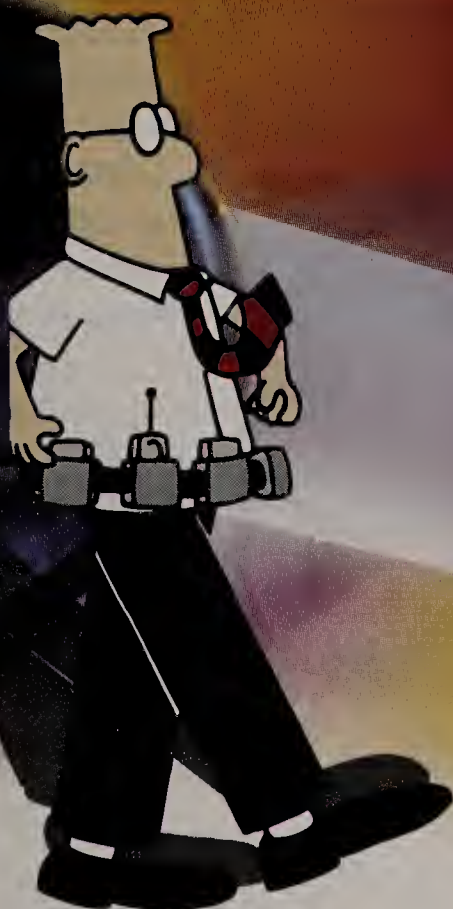
Send your political war stories or thoughts about our ongoing Total Leadership column to leadership@cio.com.

Before retiring in 1999, Patricia M. Wallington was corporate vice president and CIO at Xerox Corp. In 1997 Wallington, now president of CIO Associates in Sarasota, Fla., was inducted into the Women in Science and Technology Hall of Fame and named one of the 12 most influential IT executives of the decade by *CIO*.



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It's that sinking feeling in your stomach. That look your face makes every time you read a story about a disastrous corporate security breach. It's that nagging fear that won't go away no matter how many times you tell yourself there's nothing to worry about. Because there is, security is the number one concern of every IT professional for good reason. The good news is that there's a proven solution you can trust.

Without Bullet-Proof Security, Successful eBusiness Is Impossible

The only thing bigger than the opportunity that

comes with putting your business on the Web is all the risk that goes with it.

Undetected attacks can strike at any time, from anywhere, in a mind-boggling variety of forms. Most sites can't even track every attempt. And new threats are developed every day, all over the world.

Without the right protection, eCompanies risk losing everything: data, customers, revenue, and more.

A Simple Solution To Your Most Complicated Challenge

Online business through eCommerce, corporate intranets, partner-to-partner transactions



on extranets and websites, as well as their supporting enterprise-wide assets — all need to be secured. Protecting the integrity and availability of intranet information is critical to all organizations.

Web-enabled business applications open up all of your back-end and legacy systems to the world.

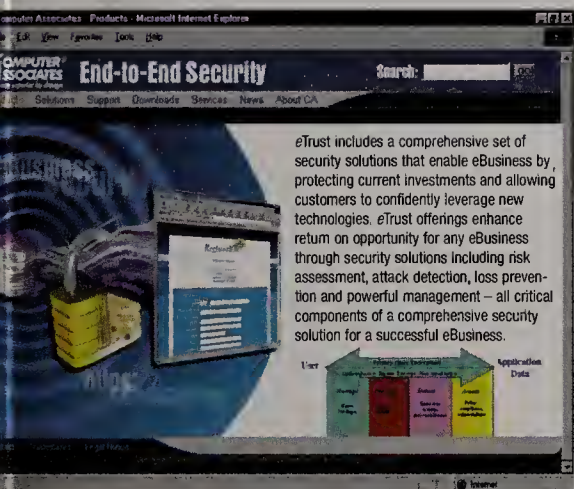
Unfortunately, in the race to become Web-enabled, security has taken a back seat. IT managers often give themselves a false sense of security with a standalone or partial security solution. They forget that security is only as strong as its weakest link and that eCompanies need an integrated and comprehensive security solution that provides best-of-breed functionality.

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WHEEL OF MISFORTUNE?

Before you gamble on a dotcom career, examine the odds

BY STEWART DECK

Everyone's looking for a chance to strike it rich by jumping to an internet startup. But knowing which opportunity

Learn

- ▶ What issues to consider before jumping to a dotcom
- ▶ How to evaluate a startup's chances of success
- ▶ Situations to avoid

is the right one is not easy. When faced with such a choice, there are certain questions you should ask about the company and about yourself.

1 Do You Believe in the Business?

Start with the business plan and study it closely. If the business model is easy to explain and either fits a relatively untapped market or has something unique to offer an established market, potential investors and customers will have no trouble grasping its

concept. And if the public understands what a company is offering, they're more likely to use the service, and a company is more likely to succeed.

Robert L. Paquin, COO and CIO at Blue Nile, a Seattle-based online diamond and jewelry retailer, says he was drawn to Blue Nile's business model because of the high margin per item sold and because it negated

the need for a large distribution center infrastructure. "I listened for a compelling business model that was sustainable, not just something trendy for an IPO launch," says Paquin, who was the senior vice president of operations and IS at L.L. Bean for six years prior to moving to Blue Nile.

"Diamonds have a strict set of [gem] standards," he adds, "and the business model of

ROBERT PAQUIN

Formerly: Senior VP of operations and IS, L.L. Bean

Currently: COO and CIO, Blue Nile, Seattle

“I know it's going to take a tremendous amount of energy to breathe life into this, but unlike L.L. Bean we won't have to sell 100,000 items a day to be successful.”

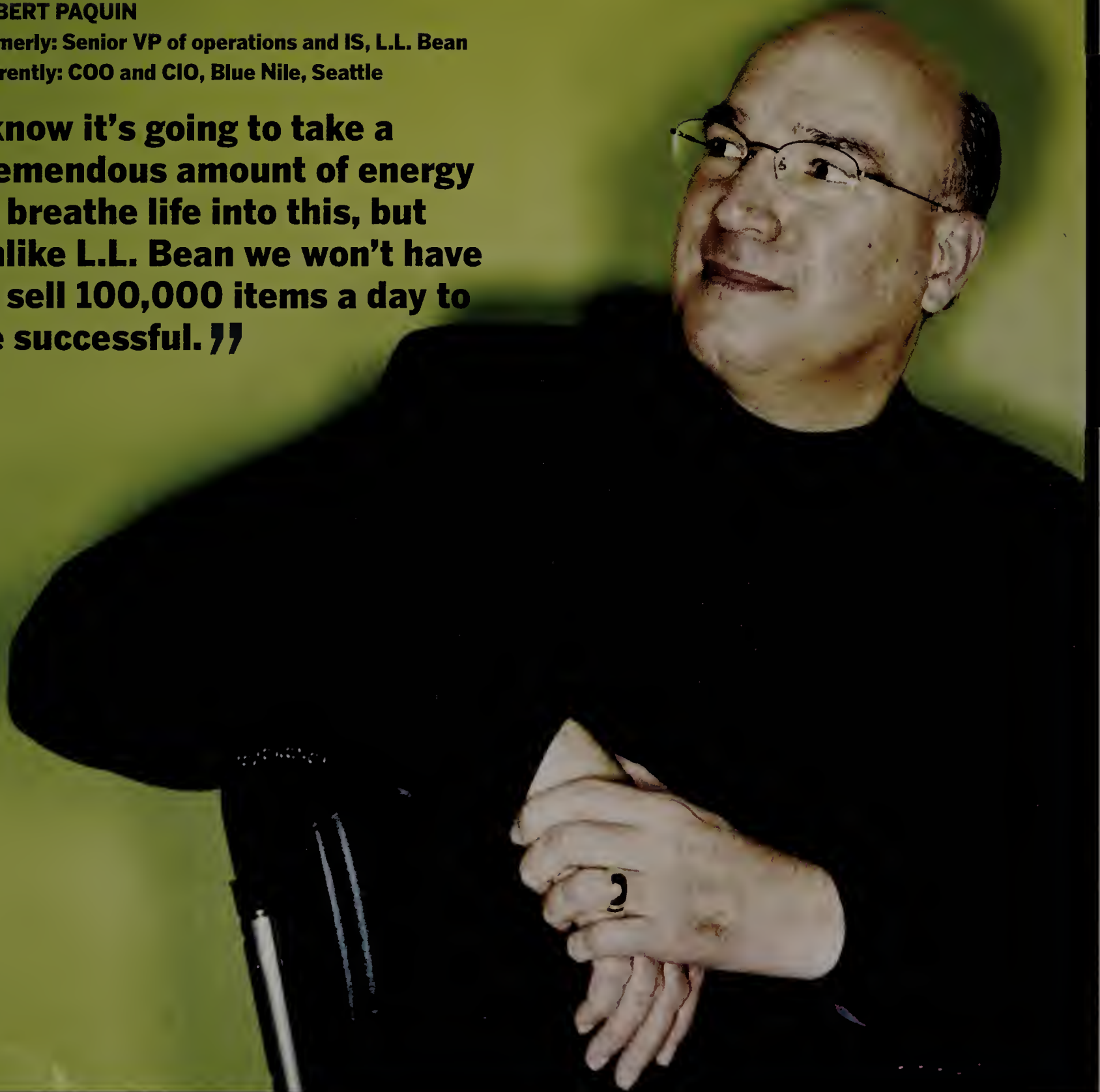


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targeting men, the predominant online users, also made sense to me." Paquin believed that the internet was a logical place to sell diamonds. "I remembered what a painful experience it was to go to a jewelry store to learn about buying a diamond," he says. "And I saw the kind of research and guidance that Blue Nile was planning to provide to that target audience. It clicked for me."

Sometimes the attraction to a particular business plan takes on more of a personal sense. "I was drawn to PayMyBills.com's business model because of my financial background," says Bob Whyte, senior vice president and CTO at PayMyBills.com, a Pasadena, Calif.-based online bill-paying company. "I knew that other outfits offered online bill payment, but this model could handle all of someone's bills. That was different and compelling," says Whyte, previously a CIO at DirectTV for three years and CIO of Walt Disney's Imagineering division for four years before that.

John Cross says he found Bethesda, Md.-based AppNet's ideas intriguing because of the company's plan to offer a broad range of integrated internet services. "By providing a set of services, AppNet can offer clients a faster time to market and stability through the delivery of internet systems," says the 30-year veteran of BP Amoco, who served 10 of those years as the company's CIO. "It was an astute plan for what businesses needed and what no other single company could offer."

But a good plan by itself isn't good enough. Do the research to discover if other companies have similar plans or are already offering a similar service or product. "First movers will have many advantages—from market brand to investors—that latecomers won't," says Phil Schneidermeyer, leader of the technology officers' practice at Stamford, Conn.-based Korn/Ferry. It's also important to know what stage of development a company is in: embryonic, beta or on the launch pad. Even if a company has a first-mover advantage, it could lose it if it is too slow to get to market because the competition is not going to sit still.

Look for any logical gaps in the plan. Be sure it doesn't take a leap of faith and sim-



ply count on something working out. And lastly, if the plan calls for partnerships, research those partners to see whether they have good reputations for delivering what they're supposed to.

Another word of caution: "Some business plans seem to have no intention of profitability," says Whyte. "These plans call for launching the business, going public and getting a lot of money, period. If growing beyond the IPO isn't part of the plan, you might want to think carefully about it and

consider what you really want to get from the experience."

2 Who's Funding This Venture, Anyway?

Once you've determined that a startup's business plan is worth the effort, turn your attention toward funding. "Finding out who the players are will give you some idea about the credibility and substance of the company," says Beverly Lieberman, president of

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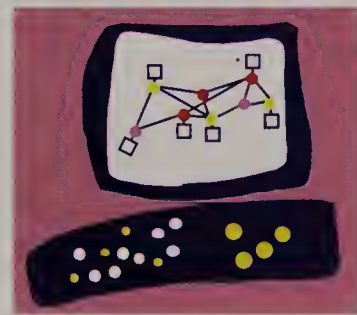
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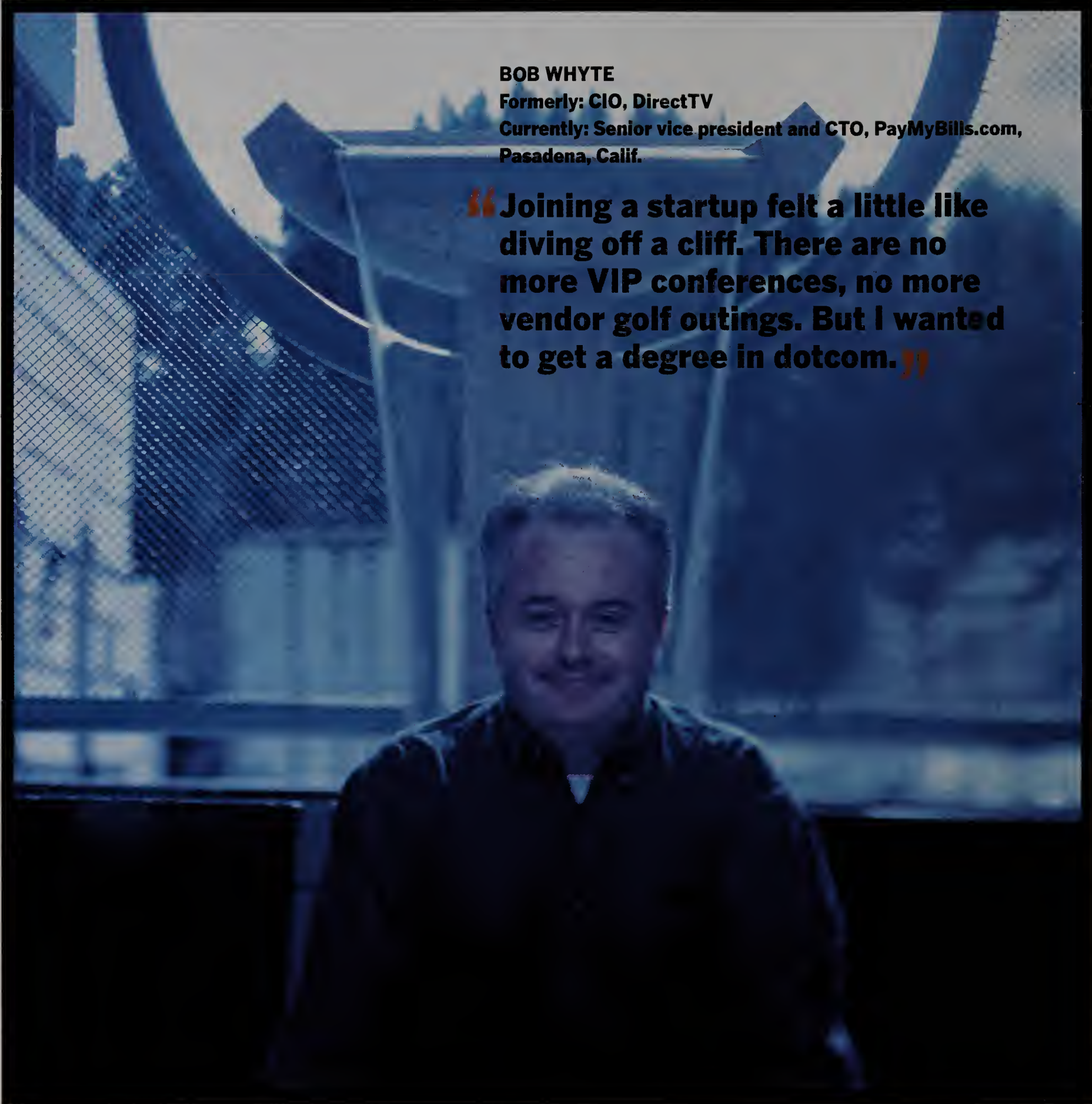
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BOB WHYTE

Formerly: CIO, DirectTV

Currently: Senior vice president and CTO, PayMyBills.com, Pasadena, Calif.

“Joining a startup felt a little like diving off a cliff. There are no more VIP conferences, no more vendor golf outings. But I wanted to get a degree in dotcom.”

Halbrecht Lieberman Associates, an executive search company based in Stamford, Conn.

Dotcoms will typically disclose where their venture money and financial backing is coming from. A startup with backing from a well-known company with a good track record is the ideal situation. If established VC

firms such as Kleiner Perkins, Trinity or Bessemer Venture Partners have invested in the plan, a prospective recruit can take comfort in knowing that the business plan has already passed a rigorous test.

However, if the VCs' names don't ring a bell, it doesn't necessarily suggest that they aren't well-respected or that they don't have

a solid track record. Ask the VCs directly what other companies they've invested in. Research other launches they've funded. If they have provided some of the seed money for now-successful companies, it shows that they understand their business and have some insight into whether a company has potential.

Cross suggests talking to some of the ven-



Does the fact that technology keeps improving fascinate you?
Or frustrate you?

*Read on to see how
MCI WorldCom used
Voice over Frame
technology to help
an Insurance company
save money.*

It seems every three months there's a new "killer app." The media heralds it. Startups sell it. And you lie awake at night wondering if you should buy it.

Case in point. An insurance company was hearing a lot of good things about Voice over IP technology. About how it could help their branch offices communicate with their home office for a fraction of the cost.

When MCI WorldComSM assessed the situation, however, we noticed an interesting thing. They used IP for e-mail. But kept the lion's share of their mission critical data on Frame Relay. An important distinction. Because that meant they could use the spare bandwidth on their Frame Relay to carry voice. Maximizing their past investment. Minimizing their new one.

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MCI WorldCom Continuum

VOICE OVER DATA

INTERNET

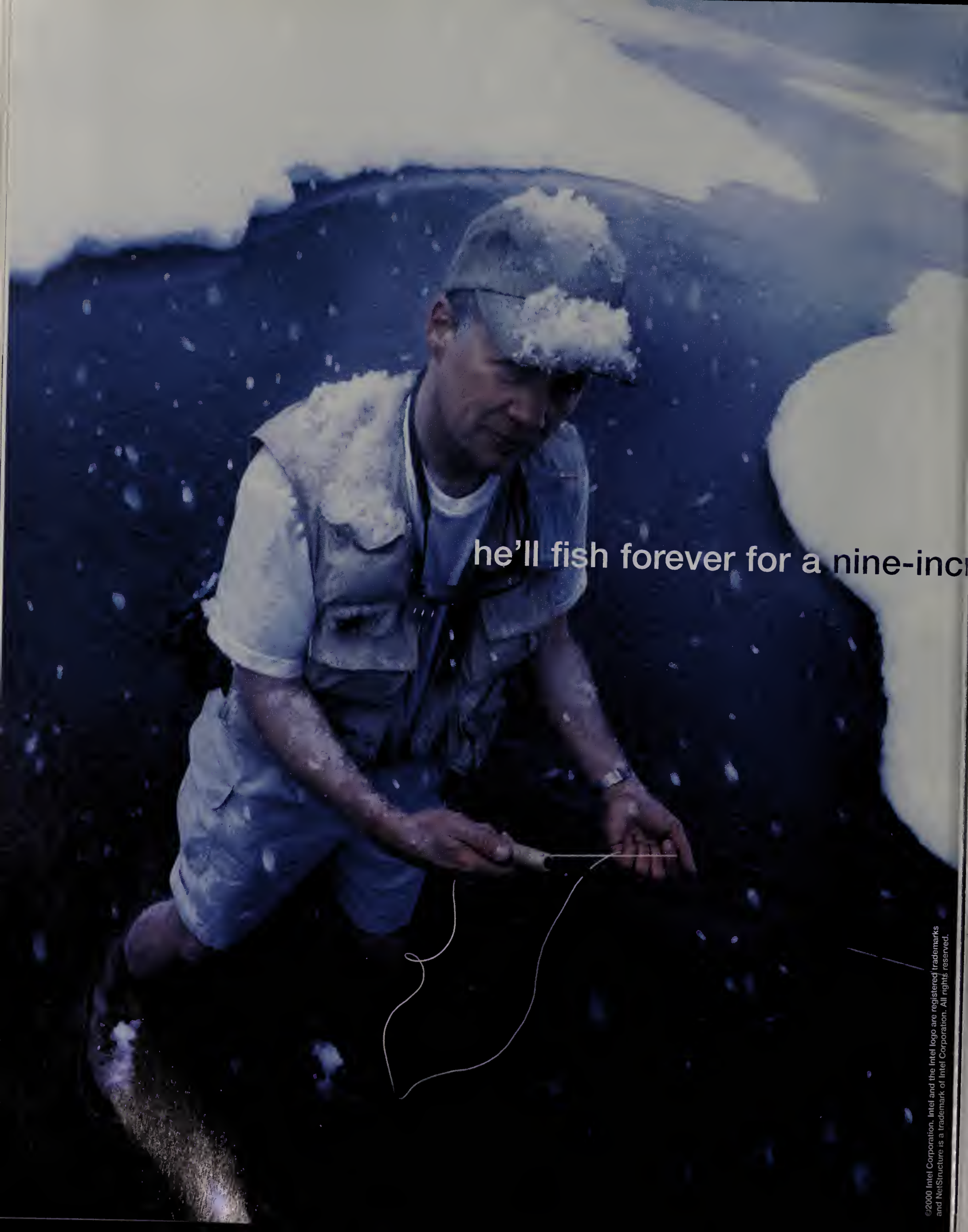
DSL

FRAME RELAY

ATM

VPN

**MCI WORLD.COM.**

A man wearing a fishing vest and cap is kneeling in a river, holding a fishing rod. A large fish is visible on the right side of the frame, partially obscured by the text. The water is dark and turbulent.

he'll fish forever for a nine-inch

brookie, yet he won't wait eight seconds
to order new waders online. *that's cold.*

sometimes it takes all the patience one can muster to land the big one. which makes it all the more ironic that the average joe will wait just 8 seconds for an online transaction. of course, you could easily get your site into zoom mode with intel® netstructure™ 7110 e-commerce accelerators, which can increase the processing of encrypted transactions by up to 50 times. these accelerators are the first designed specifically for e-commerce, enabling customer transactions—even in ssl mode—to happen almost instantly. to get information on how to reel in more customers on your web site, visit ours: [→ www.intel.com/waders](http://www.intel.com/waders)



ture funders directly, which is exactly what he did before joining AppNet. He went straight to GTCR, the Chicago-based private equity fund that had invested in AppNet. "I wanted to hear from them why they were putting \$100 million into this venture and what sold them on the idea," he recalls. By speaking to GTCR, Cross learned that the company makes only a few large investments rather than spreading out smaller amounts among many startups the way other VCs do. The combination of the name and the dollar amount added to Cross's assurance that AppNet had plenty of resources to fulfill its initial expansion and acquisition plans.

Venture capitalists comb through and listen to business presentations every day and are accustomed to discerning the good from the bad. Ask them what stands out about the particular company you're looking into. In your discussions, ask them why they are excited by this offering. By doing so, you may learn that your prospective new company may have relatively few competitors or that it is targeting an untapped market.

Some companies begin life with a head start from an idea incubator such as Idealab. Incubators themselves do their homework and show their belief in the business model by providing basic office infrastructure such as phones, internet access and a technology starter kit. Pasadena, Calif.-based Idealab backed CarsDirect.com and PayMyBills.com. Debra Domeyer notes that making the move last fall to CIO of CarsDirect.com, an online car-buying company in Los Angeles, from the CIO position at Pacific Gas and Electric Co., was easier to do knowing that Idealab had been an early backer of the company.

3 Are the Members of the Management Team Credible?

The business acumen of the management team is vital to a startup's success, and the personal chemistry of the team is vital to the company's long-term health. When contemplating a move to a large corporation, you typically might not consider the techni-

cal credibility of the CEO or CFO or place too much emphasis on how well you get along with them personally. But this is vital in dotcom land because of how closely you'll be working with the other executives (there's a good chance you won't even have separate offices).

At a startup, the management team will be making significant business decisions that will directly affect the company's future. There are no review boards, no standing around waiting for the OK from someone else. You decide something in the morning and start implementing it in the afternoon. With all this at stake, you'd better make sure you click with the leadership team already in place. "You won't have the luxury of time

to gradually work toward a consensus," says Whyte. "You need to be able to get along with [the management team] so that you can set vision plans quickly and then scramble to get things done."

Learn all you can about the management team, the board of directors and the board of advisers. Any previous experience and track record where they've shown leadership and integrity in their earlier ventures will show you what to expect if you join the crew. "Our cofounders have impressive backgrounds in consulting, and our vice president of IT was with Fatbrain.com [a well-respected online bookseller] in the early days," says Blue Nile's Paquin. "This showed me that the company had a good

IT AIN'T EASY BEING A STARTUP

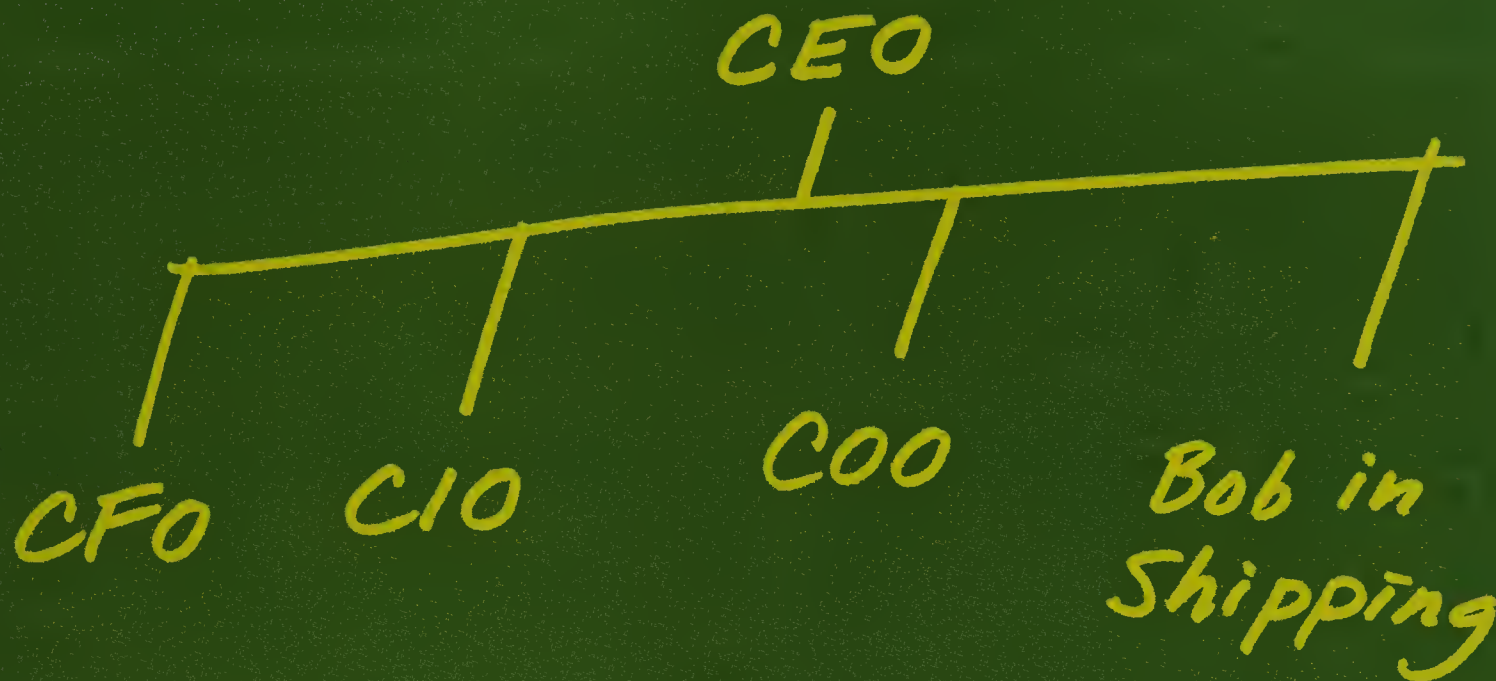
Study these issues before accepting a position at a dotcom

FACE IT. The odds are stacked against you if you're an internet startup. Maybe one out of 100 startups go on to become successful companies, says Joanna Strober, a partner at Bessemer Venture Partners, a Menlo Park, Calif.-based venture capital firm. As if that wasn't enough, even with good venture capital funding, perhaps 1 in 10 is successful, she adds.

With that in mind, the following is a quick list to run down before saying yes to the all-powerful lure of a dotcom.

- Who is backing the company? Venture capital firms? Private funding?
- Who is the competition and how well does the company know them?
- What round of funding is the company in? How many is it planning to go through?
- What kind of technology is already in place at the company?
- Know what's coming to you. What will you get and when?
- Ask the venture capitalists about their successes. What companies have flopped and why? And what companies succeeded and why?
- Do you feel a sense of urgency in the company to get its idea to market?
- What were the biggest (or latest) controversies or internal disagreements within the company? How were they handled? (The answer will give you some insight about what will happen when you completely disagree on a strategy or other decision.)
- Ask about marketing plans for driving traffic to the site. Is the company a little too sure that its good idea will generate traffic all on its own through a "we will build it and they will come" strategy?

—S. Deck



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DEBRA DOMEYER

Formerly: CIO, Pacific Gas and Electric Co.

Currently: CIO, CarsDirect.com,
Los Angeles

“I wanted to experience the amazing pace of a startup environment and wear many hats.”



grasp of what it was doing,” he adds.

“If you join a startup with a proven team in the right areas, such as internet infrastructure services, then you stand a better chance of generating significant equity value for yourself and your company,” adds David

J. Cowan, a managing partner at Menlo Park, Calif.-based Bessemer Venture Partners. “If you join a rookie team with no backing in a market space with questionable value or economics, then you’re fighting 50-to-1 odds.”

Real-world startup experience from the management team is what you’re hoping to find. Barring that, high-level experience with a traditional company will do (after all, that’s what your own credentials are). Be wary if no one in charge has run a company before,



or



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and be wary if upper management seems to talk only of going public. If the goal of the leaders is to have an IPO and then cash out and leave, you could be left trying to run and fix a mess.

Get a feel for the way the management team operates by asking to sit in on a meeting. "I was given the opportunity to attend a two-day management meeting before I joined," recalls AppNet's Cross. "I watched how they communicated and how they arrived at decisions and what kind of col-

lective vision they had for the company. I was able to observe the group dynamics of how the management functioned as a whole and decide if it was a culture I was going to be comfortable in."

Cross noticed that the managers, many of them young and already millionaires, were energetic and enthusiastic. During the meeting, he watched how each of their individual expertises fit together, and he saw them start to map out strategic plans for the future. The management team's excitement

and ideas grew throughout the course of the meeting, having a domino effect of sorts on Cross and his own ideas about where the company was headed.

4 Does the Company Have Flexible, Scalable Technology in Place?

This may sound like a small point, but it is vital to a company's success. Examine what technology choices have already been made. Specifically you'll want to see that the architecture planners chose tools that are scalable, flexible and capable of handling high-volume transactions.

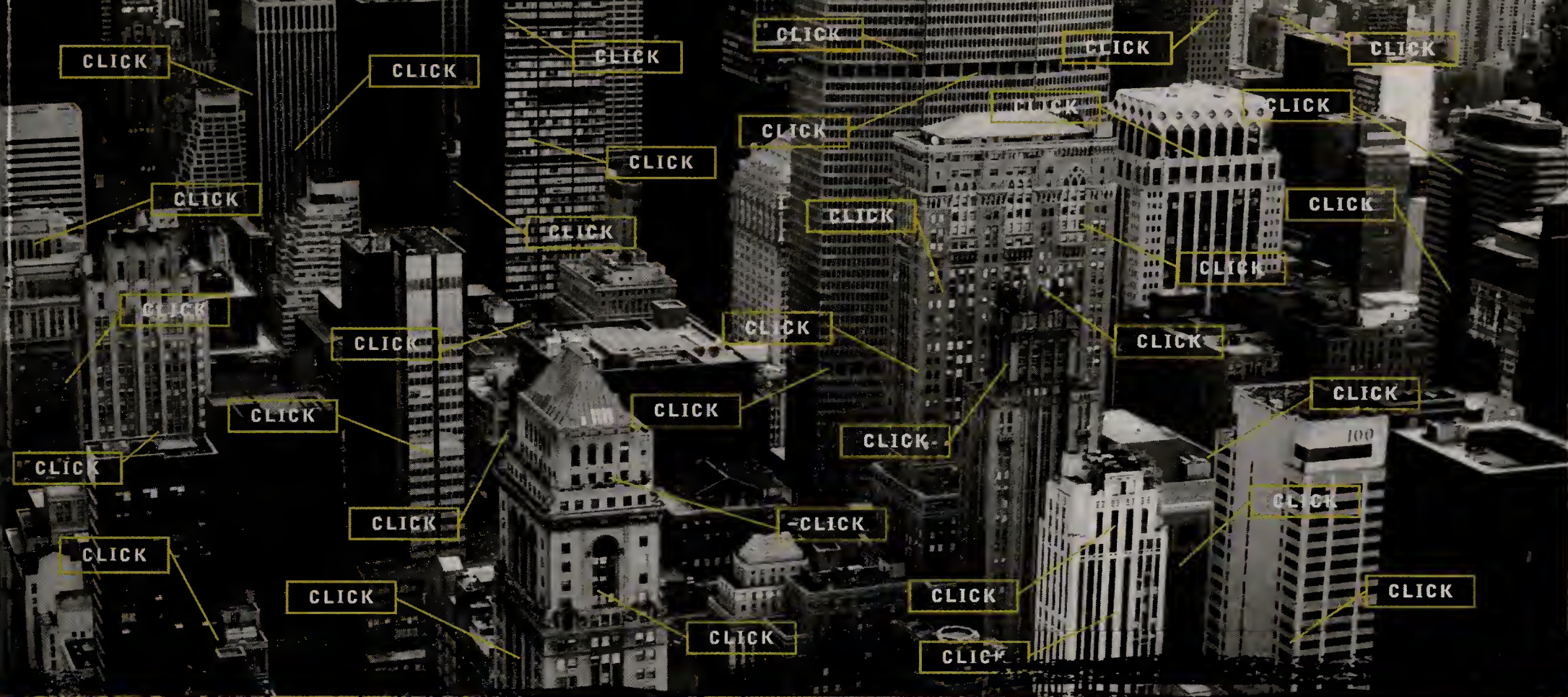
"Before moving to CarsDirect.com, I asked tons of questions about the technology plans," says Domeyer. "The more I learned about the business plan, the more I recognized that it depended on a rock-solid technology foundation" because it counted on volumes of internet traffic and needed to have very reliable privacy and security features, she adds. "Learning about the web-based relationship management and reporting tools and the underlying architecture's combination of Unix, Linux and [Windows] NT made me very comfortable about what we could do in the future."

As a prospective recruit, you should also ask about what technology decisions have already been made, what operating system platforms are in place and what the architectural foundation is. Note if any of the already-purchased pieces have a reputation for scalability troubles. See if the existing technology products come from well-established companies such as Sun Microsystems, Oracle, Informix, Microsoft, IBM and others. "It isn't a good sign if a website is based on tools from vendors you've never heard of," says Whyte.

If you see too many inflexible, proprietary technologies in place, be wary because you want the freedom and nimbleness to adapt to quickly changing conditions. If a company is tied too tightly to proprietary technologies, its future choices will be limited and implementation will be slow. Related to that, ask enough questions to gauge whether the



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JOHN CROSS

Formerly: CIO, BP Amoco

**Currently: Executive vice president, AppNet,
Bethesda, Md.**

**“Leaping onto the internet
wave was a no-brainer.
The key was choosing the
right surfboard to ride.”**

company's executives have subtle or not-so-subtle technology biases or favorites. A CEO who consistently encourages you to buy tools only from his or her own favorite vendors will limit your flexibility, which could harm the business in the long run.

Also ask the planners what sites or companies the startup uses as technology models. If, for example, the business plan is for a new kind of online financial services company, it should follow the basic patterns of good financial services sites with

extra security and redundancy features. A financial services business plan that overlooks that in favor of the latest load-balancing tools used by online portals has not made thoughtful and solid technology choices.

PHOTO BY THOMAS ARLEDGE

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5 What Do Stock Options Really Mean?

Finally we get to the good stuff, right? Isn't it really about the almighty stock options? Well, yes and no, and not right away. Yes, you'll get paid, but you'll probably take a pay cut, possibly a big pay cut. You could be working twice the number of hours for as much as 50 percent less cash compensation. Cross says he had another offer that was 10 times higher than the salary he was offered at AppNet. "That's the risk you're taking," he says. "You're trading today's income for the chance of tomorrow's wealth."

The common stock and the stock options make up the difference, of course. With that in mind, you need to know what to expect and

package can be attractive. At press time, for example, a 1 percent stake of the outstanding shares of Garden.com (an online gardening company) would easily clear \$1 million. A similar 1 percent portion of internet advertising service Be Free Inc.'s outstanding shares would now be worth more than \$5 million, and a 0.5 percent stake in AppNet would now be worth more than \$7 million. Although each company has different vesting schedules for stock options, many startups accelerate vesting to reward the founding employees. Some employees can begin to exercise their first set of options (sometimes up to one-quarter of their total shares) to buy company stock a year after they join.

Bigger isn't necessarily better in the world

quickly, but an unusual spike in the forecasted growth should prompt you to ask a few questions. For example, if the company has steadily grown in value by 50 percent every four months for the past year and a half, a sudden shift to 300 percent growth is unlikely. If you're counting on a huge leap in company valuation in order for your options to be worth what the other execs are claiming they'll be worth, you need to explore why such unusual growth is forecasted. With a clear picture of how the company is growing, you can plot the kind of value your stock options have and the monetary value of what you're being offered.

This company valuation will also help illustrate when a company is within sight of going public. For example, a company must

You'll probably take a pay cut, possibly a big pay cut. You could be working twice the number of hours for as much as 50 percent less cash compensation.

what to ask for. Whyte says the CIO/CTO-level worker coming into a startup may be offered a 1 percent to 5 percent ownership stake. But the closer the outfit gets to launching its service, the smaller that stake may be because a good portion of the initial available stock will have been passed out to early investors and executives. The more rounds of funding a company goes through, the more your shares will be diluted. This doesn't mean the number of shares you get will be cut; it just means that your overall ownership percentage of the company will decrease.

For example, if the company has gone through two rounds and will go through two or three more, your portion will shrink considerably. "If they aren't sure how many financing rounds they'll go through or you're getting very wishy-washy answers to these kinds of questions, it's a definite warning sign," says Whyte.

Taking a look at some hypothetical numbers will show how a stock option

of internet startup stakes. However, a large offering is a danger sign that a company is too eager to get someone and either is unlikely to have any hope at going public or of even surviving for too long. A combination of too large a stock offer and some uncertainty in your research is reason enough to turn down an offer.

Look into the future value of the company and its stock options by inspecting the periodic valuation reports that the board of directors presents to financial backers. Compare how the value of the company has changed over time and how many shares of stock are outstanding. If the value of the company steadily increases while the number of outstanding shares remains fairly constant, you will be able to plot how the value of those option shares you're offered is likely to increase over time.

Look at that valuation growth chart again and see if it calls for a future period of monstrous growth. Startups will certainly grow

meet some specific requirements before it can be listed on Nasdaq. One way is that a company must have net tangible assets of at least \$6 million and pretax income of \$1 million per year, along with a minimum bid price of \$5 (to learn more, visit www.nasdaq.com/about/FeeStruc.stm).

Jumping to a startup purely for the dollar payoff is a mistake. But jumping for the challenge and the fun will probably bring plenty of rewards. "Even with all of the hours, I'd have to say that I'm surprised at how much fun I'm having," says Domeyer. "There's energy everywhere and the speed of everything is invigorating."

Whyte adds, "Everything is so much quicker that it's scary sometimes. But there's nothing in a Fortune 500 company that compares with the excitement of it all." **CIO**

Staff Writer Stewart Deck wants to hear your tales of the thrills and challenges of being a CIO at an internet startup. Drop him a line at sdeck@cio.com.

What would it feel like if the back office could keep pace with your *e* business strategy?

**Ask David Stanley, Director of Technology,
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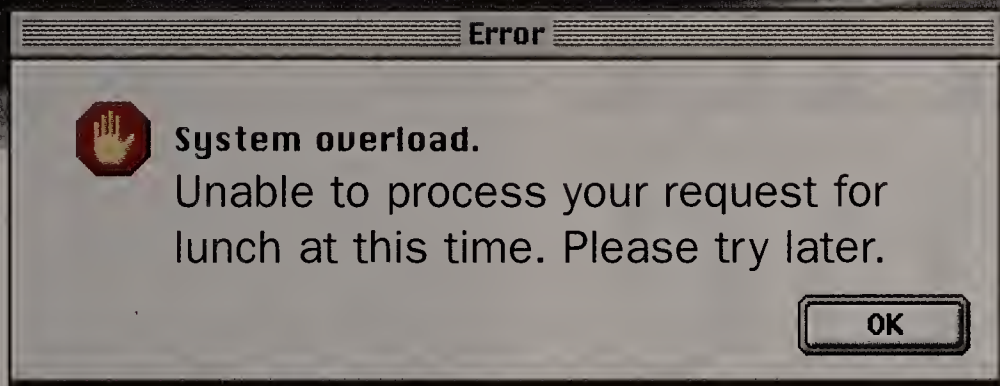
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End Game

BY EMELIE RUTHERFORD

*David Weinberger, coauthor
of The Cluetrain Manifesto,
talks about the impending death
of corporate life as we know it*

After years of writing about such company-centric issues as knowledge management and company intranets, David Weinberger, whose résumé includes the editorship of *Joho* (the *Journal of the Hyperlinked Organization*), commentator on National Public Radio, columnist for *KMWorld* and *Intranet Design Magazine*, writer for *Wired* and consultant for Open Text, has finally discovered business' big secret, which he shares in *The Cluetrain Manifesto: The End of Business as Usual*, the web mantra turned book he assembled with Rick Levine, Christopher Locke and Doc Searls. Weinberger's cohorts are no strangers themselves to organizations' attempts to grapple with the internet: Levine is a web designer and software architect for Sun Microsystems' Java group; Locke consults with such operations as Carnegie Mellon University, MCI WorldCom and IBM on their business strategies; and Searls, president of the Silicon Valley marketing consultancy The Searls Group, is senior editor of *Linux Journal*.

Weinberger's epiphany in "The Hyperlinked Organization"

chapter of *The Cluetrain Manifesto* is simple: Businesses don't consist of slots on an org chart or entries in a database. Businesses are made up of people. And people define and organize the business by continually discussing, literally and metaphorically, what their company is really all about. The internet's influence is killing traditional business structures and allowing these human hyperlinks to organize businesses. Web Writer Emelie Rutherford recently caught up with Weinberger and he clued her in to business' big secret, that we are all human. "Here's some news for today's business pharaohs," Weinberger said. "Your pyramid is being replaced by hyperlinks. It was built on sand anyway."



PHOTO BY WEBB CHAPPELL



CIO: How is the internet affecting traditional business structures?

Weinberger: Businesses are taking on the structure of the web—decentralized, messy, self-organizing. For example, intranets are making it much easier for teams to hyperlink themselves together. To solve a customer problem, you use the intranet and e-mail to pull together the people that you know can solve it, regardless of their position on the org chart. These motivated, intelligent, committed hyperlinked teams keep the business closer to the customer.

But many businesses are devoted to maintaining the org chart

through everything from disciplinary action to body language, so hyperlinked teams route around org charts. Even informing your manager about a hyperlinked project can feel like a waste of time. Yet these teams constitute a second life of the organization and the place where the most valuable work is getting done.

That sounds messy. How do you manage the information resources in that type of environment?

You have to learn to love messiness—although messiness has been the sworn enemy of information management professionals. For example, when you build an employee database, you capture the information that's essential to be managed, but you leave out most of the stuff humans actually use to decide with whom we want to work. We leave out that Sally is wickedly funny, that Fred is really creative but many of his ideas are bad, that Carlos is a great initiator but is weak on follow-through and that Wanda is a great person to travel with.

Humans get a huge amount of value from this richer data. We listen to the tone of the voice, and we use that as an important guide to whether the information being communicated is worthwhile. The web is full of this richer data—webpages and other web communications are fuller expressions of individuality than can be captured on a form or managed in a database. They include tone of voice, attitude, humor—all of which are crucial to understanding what's being said. We are learning to expect richer data, to be suspicious of data pared down so that it can be placed in a database and managed.

How do you evaluate the validity of information in this type of open, messy environment?

Say you're thinking about buying a watch and you're trying to decide between a Seiko and another brand. You can probably get all of the facts and stats from Seiko's webpage, but a Usenet discussion may contain people who are trashing and waxing enthusiastic about Seiko. And you listen to those voices and you make judgments. You say, "I've seen a number of messages from this one person and he's always enthusiastic about Seiko. According to him, they can do no wrong. I'm not sure I trust him. This other person seems to have some distance, is funny, has comments pro and con. I really like this person's voice. This person I'll trust."

We've always done this in conversations, but this is now becoming a requirement for evaluating business information—business information now is wrapped in human voices and that's an essential part of our ability to make sense of this information.

Doesn't this favor those with great communication skills?

Very much so. But more and more styles and modes of communication are becoming not only accepted but valued. The per-

son who absolutely cannot stand up in front of customers and deliver a smooth PowerPoint presentation may turn out to be the one who's able to engage in rapid—and hilariously funny—e-mail back and forth with the very same customers. They may hate him in a conference but love him on a mailing list. And an important new skill is being required of our best communicators: They need to stand for something, to care about what they're talking about, to be able to talk from the heart in their own words.



The role of the CIO is to enable natural conversations to occur in the office and to enable their fruit to further enrich the environment.

So these new conversations aren't simply among a business's customers.

Not at all. Customers want to talk with the crazy woman in your back room who actually comes up with all the good ideas as well as tons of bad ideas. They want to talk with the designers of the interface or of the controls. They want to talk with everybody who's involved with the product. After all, your customers

and employees share a common passion: the product.

That's the way it was before the industrial revolution when there were real, literal markets where the customers engaged with the craftspeople who cared about the pot they were shaping or the flute they were carving or the apple they were growing. The industrial revolution introduced a separation between the producers and the consumers.

But in the world of the web, once again there's a direct connection between the customers who care about the products and the people in the company who care about the products. It can't be stopped. The firewall can't stop it because people go home. They're on e-mail or they're going to a customer's webpage that talks about the product because they love it or they hate it. And it shouldn't be stopped. These conversations are where the passion of your business occurs. It is your business's greatest asset.

So does a hyperlinked organization still have a marketing department?

Yes, but it may be quite unlike the one it has now, if it's following the postindustrial broadcast model of marketing that thinks its job is to drill a single, simple brand message into the heads of masses of consumers. Imagine that you had a TV set that allowed you to engage in conversations with everybody else who's watching the same ad. Now when you see an ad that makes some stupid, ridiculous claim, you can hear the rest of the country laughing at it along with you. You can hear the rest of the country saying, "Nobody believes this. How dumb do they think we are?"

If you were able to have this type of active audience, you couldn't do the dumb ads that are insulting and implausible. You couldn't do branding where you simply try to take a simple idea and impress it upon the couch potato brain of the market.

Well, we do have that way of communicating. We can find out, for example, if the Saturn ads that claim that their dealers are friendly, warm and supportive, are true. We can find out in three minutes on the web by listening to conversations among Saturn owners, by finding Saturn owners and asking them on the web.

That changes the nature of the medium. You can broadcast all you want. You can take up every available physical space from billboards to the risers of escalators and fill them with ads saying that Maytags never break. After \$100 million in ads, I can find out in 90 seconds whether that's true or not. So it changes the power in the relationship between the market and the business doing the mass marketing.

The web is enabling markets to become much smarter, much faster than businesses can hope to—at least businesses along the old model. The markets can't be fooled, at least not as easily as before, because a networked market is as smart as the smartest person in the market. And that's happening simply

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Why do consumers engage in these conversations about other companies' products but return to work and assume the role of the clueless corporate representative?

It's odd, isn't it? Yet we all do it. We learn to write memos so that they all sound exactly the same no matter who they're from. We learn exactly what types of jokes we can tell where. We learn how much politics we can talk in the office. We live by a

narrowly circumscribed set of rules. Why? In part it's so that we can maintain the belief that we're living in a well-managed environment, that if we play by the rules we'll be taken care of. We agree to believe that the world is manageable. That's a very comforting thing. It allows us to be efficient in many ways, to be undistracted by side issues.

But the price for it is our own voice. We can't sound like who we are. We have to drive an ax into our head—as my coauthor Doc Searls says—so that we can act one way at work and another way outside of work.

No Going Back

Author David Weinberger argues that the web has changed corporate culture in seven key ways. Business is now:

1. Hyperlinked. Before the web, computer networks were laid out in advance like well-planned cities. Who got connected to whom and how was all part of the master plan. And once you were connected, there was a recognizable central authority responsible for the whole shebang. The web isn't even a little like that. The web literally consists of hundreds of millions of pages hyperlinked together by the author of each individual page. Anyone can plug in and any page can be linked to any other, without asking permission. The web is constantly spinning itself—many small pieces loosely joining themselves as they see fit.

2. Decentralized. No one is in charge of the net. There is no central clearinghouse that dispatches all requests and approves all submissions. No one ordered the web built. There is no CEO of the web. There is no one to sue. There's no one to complain to. There's no one to fix it when it breaks. There's no one to thank.

3. Running in hypertime. Internet time is, famously, seven times the velocity of "normal" time. And yet we use the leisurely verb *browse* to describe our behavior on the web,

because in the virtual world I feel I can move about at my own pace, exploring when and where I want. I can take a quick look at a site and come back later without having to find another parking space, go to the end of the line or pay a second entry fee. The web puts the control of my time into my hands.

4. Open to direct access. The net provides what feels like direct access to everyone else on the net and to every piece of information that's ever been posted. If you want to go to a page, you just click on the link and, boom, you're there. (The fact that this might have required, beneath the surface, 30 "hops" among servers in places you never heard of is completely irrelevant. You don't see the hops; you just see the page.) There's nothing standing between you and the rest of the world of people and pages.

5. Rich in data. The currency of the web isn't green bar printouts of facts and stats. It's pages. Humans have been creating pages since the invention of paper and dirty water. Pages—or "documents," as we sometimes say—are extraordinarily complex ways of presenting information. Typically, they tell you as much about the author as about the

topic, a big change from the pre-web information environment that aimed at generating faceless data.

6. Broken. Because the web is by far the largest, most complex network ever built, and because no one owns it or controls it, it is always going to be, in the words of Tim Berners-Lee, the inventor of the web, "a little bit broken."

7. Borderless. Because traditional networks were concerned as much with security as with access, it was usually made clear where your stuff ended and other people's stuff began. The web, on the other hand, was designed so that you can include a link to a page without having to get the author's permission. Thus, on the web it is often hard to tell exactly where the boundaries are.

—Excerpted from *The Cluetrain Manifesto*



The Cluetrain Manifesto:
The End of Business as Usual,
by Rick Levine, Christopher Locke,
Doc Searls and David Weinberger;
Perseus Books, 2000; \$23.00

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The days in which the CEO can stand up and make a CEO-like presentation and not sound like a frightened windbag are already here.

Have you encountered many hyperlinked organizations?

Every company already to one degree or another is a hyperlinked organization, although management may not yet know it.

There's a division of an oil company that flattened hierarchies that were getting in the way of product work and reorganized around projects. They recognized that the role play-

How can VPs and senior managers further the hyperlinked organization?

By getting out of the way. It's not your job to create conversations, to create voices. It's your job to listen to the conversations and voices already there.

The web is remaking business in its image. This is a bottom-up, distributed network of people creating their own loose structure. You're not in charge anymore. Resist the reflex to reassert your control.

If the corporate information environment is becoming enriched, what is the role of the CIO in a hyperlinked organization?

Just as the web is nonhierarchical, so too is the information flow in organizations becoming nonhierarchical. People are coming to expect to be set loose into a wickedly rich, unmanaged "information environment" where they need to be the ones to weigh, sift, evaluate and engage in the push and shove of conversation. They don't want to be given what someone else has decided is the right information at the right time; my value to the company increasingly is my ability to ferret out what's

important by listening to the tone of voice of the person speaking, reading other people's responses, actually engaging in some e-mail about or with the person talking. The role of the CIO in this environment is not to set up sanctified, authenticating information hierarchies with a

single orifice spouting the official truth. It is instead to enable these conversations to occur and to enable the fruits of these conversations to further enrich the environment.

Are you predicting a communization of business?

Only in the sense that it's from each according to ability, not to each according to their need, the old tagline of the Marxists (although the current difference in pay between the top and the bottom is insupportable by any measure). How the power structure is going to be dismantled, what's going to happen to the corner office, what's going to happen to the big salaries, is hard to predict. Senior people who are entrenched will be able to retire happily. The next generation of leaders, however, is not going to earn its big offices by the number of people they manage. They'll earn respect by being out in the fray, by being able to laugh at mistakes and especially at their own mistakes—it's important to learn to enjoy being wrong. They'll earn the respect by being a participant just like everybody else. That's pure democracy. At last. **CIO**

Find an e-mail written in the professional voice
and you'll find an e-mail that's being passed
around as an object lesson in how to be a jerk.

ing was less important than the roles. And they acted organizationally to take care of it.

Western Digital's site moves people with customer support questions to their open, unmoderated support board where people post flaming messages about how much they hate their drive they just bought that's not working. And within a couple of hours they have an answer from a technical support person, but frequently also from another customer who responds in a friendly way about what the problem is and how it can be fixed. Here's a company that doesn't think that it has to pretend to be infallible, that's willing to admit that, gee, sometimes its drives don't work—which every customer already knows about every drive manufacturer. And as a result they get not only customer loyalty and a great support system, they also are able to do quality assurance that they could not do internally. They found out in one case that the drive wasn't working with a motherboard manufactured in Eastern Europe at the time. They found out and solved the problem.

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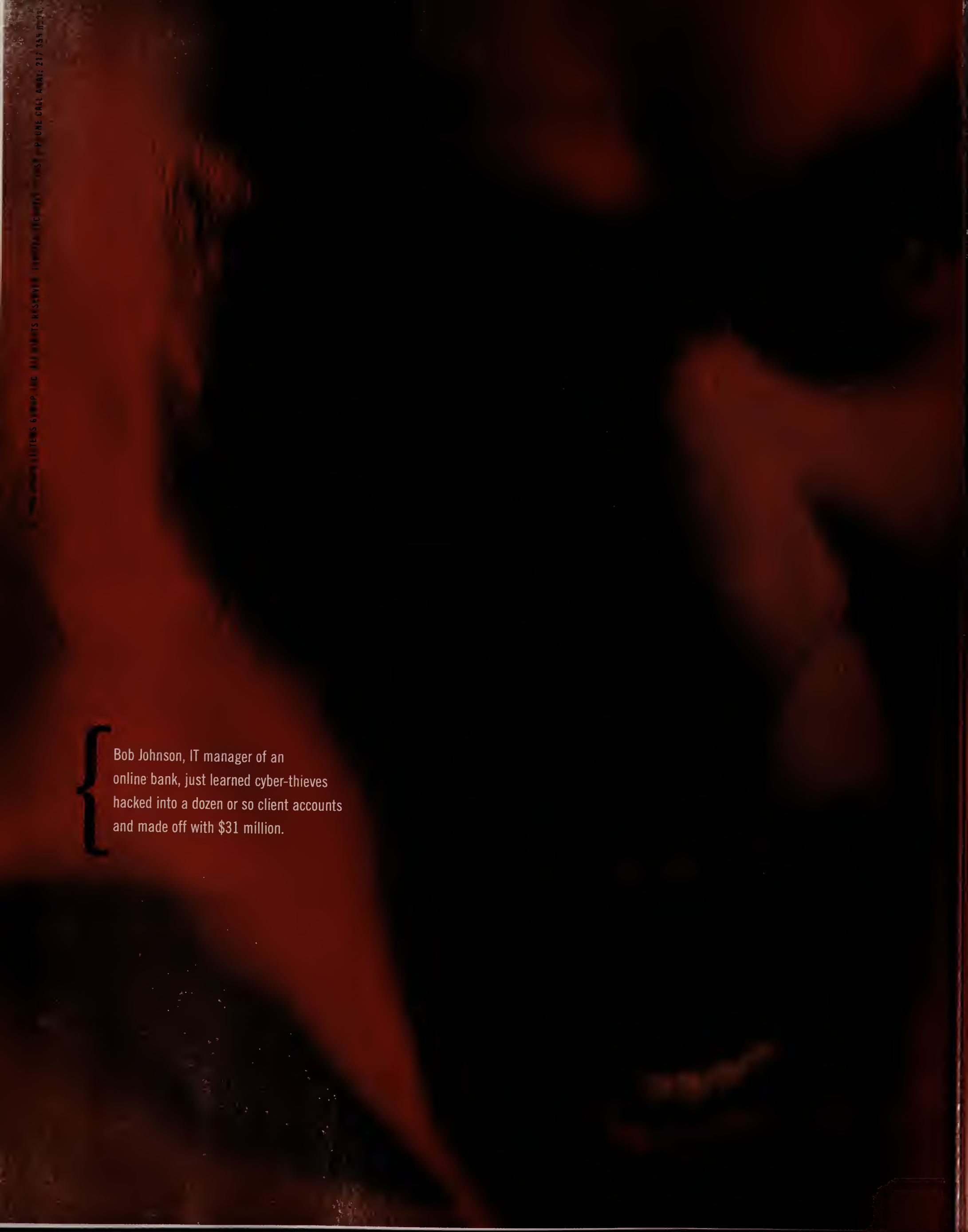
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9C11



{ Bob Johnson, IT manager of an online bank, just learned cyber-thieves hacked into a dozen or so client accounts and made off with \$31 million.

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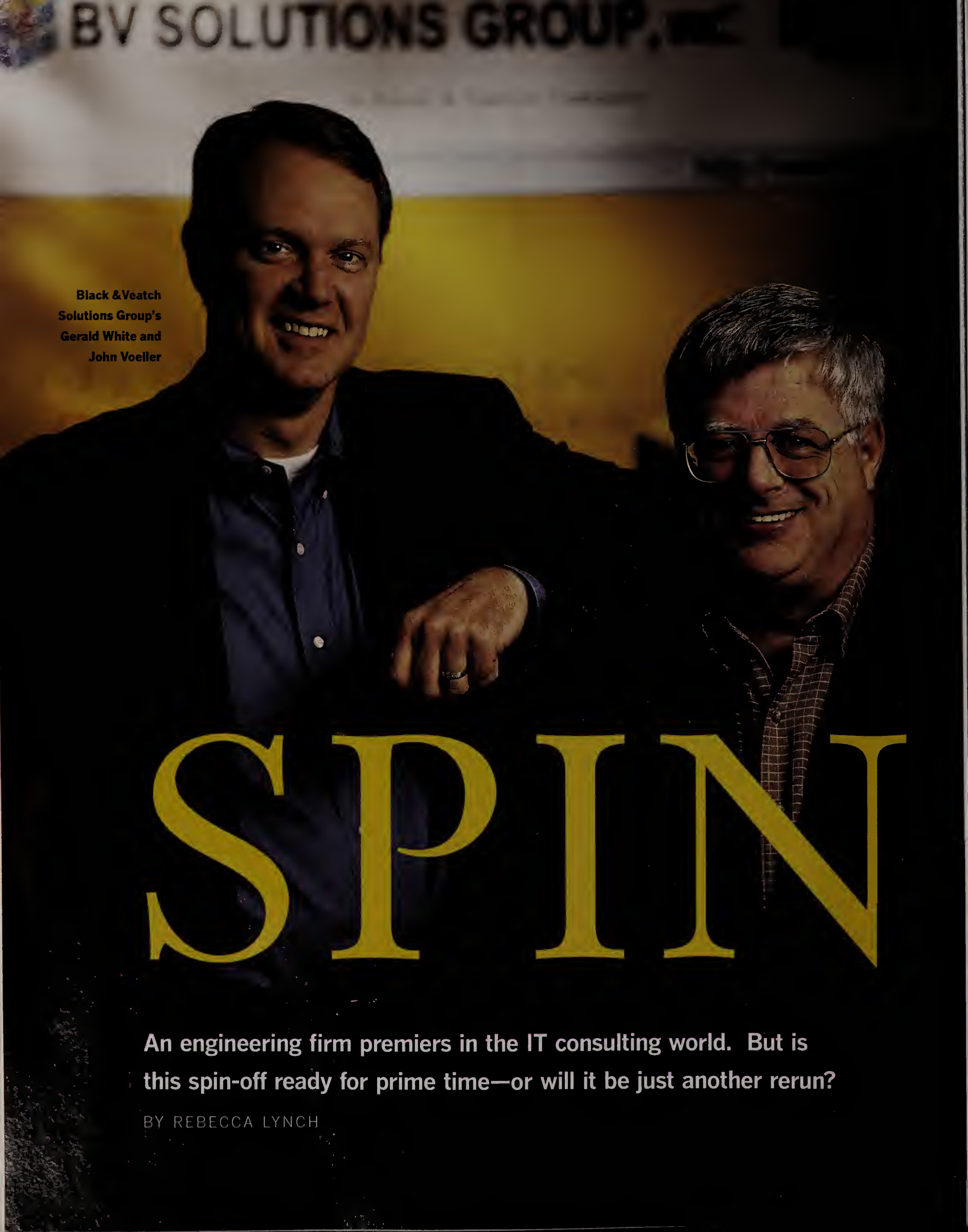
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Black & Veatch
Solutions Group's
Gerald White and
John Voeller

SPIN

An engineering firm premieres in the IT consulting world. But is this spin-off ready for prime time—or will it be just another rerun?

BY REBECCA LYNCH

WATCHING BLACK & VEATCH, the 85-year-old engineering firm based in Kansas City, Mo., spin off its IT department into a consulting organization is like watching a local farm team take on the Yankees. You hope they'll score, but experts are betting the big guys are going to cream them.

Learn

- ▶ Why the experts think the latest IT spin-off might fail
- ▶ What BVSG is doing to make sure it doesn't

CITY

That's the consensus of some industry watchers who doubt Black & Veatch Solutions Group (BVSG), which spun off from Black & Veatch in early 1999 and plans to go public sometime later this year, can survive the demands of the IT consulting world. They applaud the courage and conviction of the Little-Engineers-Who-Consult, but similar doomed attempts in recent years combined with a rapidly changing market leave industry watchers lukewarm. "I've seen this a thousand times before," says Marc Cecere, vice president of IT management with Giga Information Group in Boston. "The IT spin-off idea had its heyday about four or five years ago. Very few were successful, even the ones from larger firms."

But despite the odds, Black & Veatch thinks it can do it. "The goal," says BVSG's CEO Gerald White, who was a partner in Black & Veatch's IT department before the spin-off, "is to build a billion-dollar consulting business just like Black & Veatch built its engineering consulting business."

But why would an enduring, worldwide engineering company decide to step into the often murky, highly competitive IT consulting world? According to Black & Veatch CEO Len Rodman, who championed BVSG's efforts, the spin-off will offer its customers a few things other consulting groups don't: a winning methodology, for one; and the ability to deliver results on time and on schedule. But whether the process that makes for successful engineering will transfer into the information technology arena remains to be seen.

How IT Started

Back in the early 1980s, John Voeller, former CTO of Black & Veatch and now CKO of Black & Veatch and the consulting CTO for BVSG, helped bring what he calls data-centric thinking into the engineering world. In 1983 the company launched Powrtrak, a custom-built, relational database that

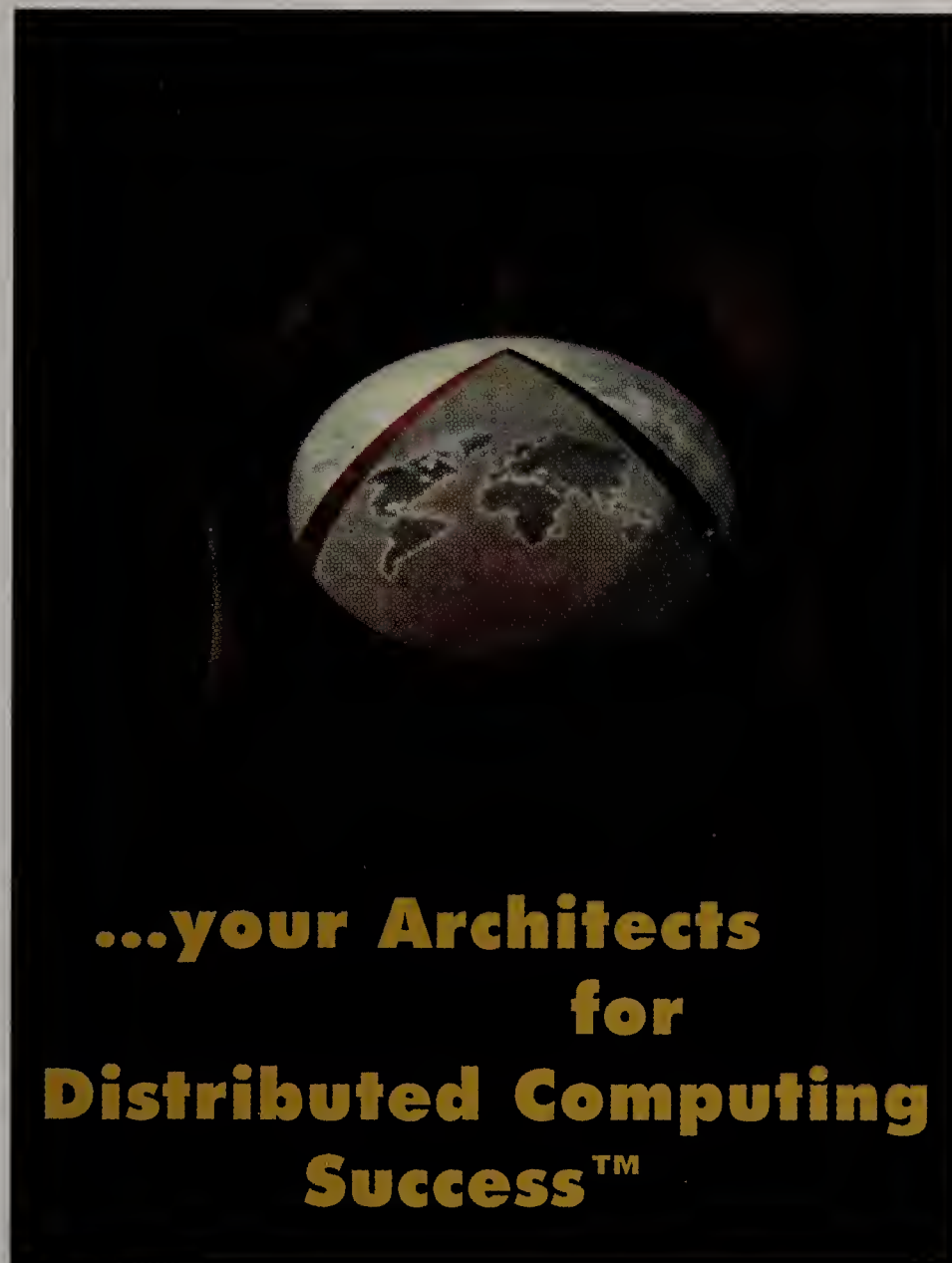
LITTLE FISH IN A BIG POND

**CEO Gerald White knows
BVSG has to go up against
the more established
consulting groups.**



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changed the way Black & Veatch did business (see "Reengineering the Engineering Business," *CIO*, Feb. 1, 1998). After Powrtrak, all project details, which were formerly kept on paper, moved into a central database where they could be updated and accessed via the internet and satellite by users all over the world.

It was a development that would determine the company's future. The database revolutionized the company, making a paper-intensive office virtually paperless. Because of Powrtrak, projects often came in on time and on budget—sometimes even under budget. Business boomed. By 1995, Black & Veatch controlled 30 percent of the domestic engineering and construction market and 24 percent of the international market.

This victory not only grew the business, it fueled ideas. Over the years, Voeller and White presented Powrtrak to nonengineering companies, which asked over and over if Black & Veatch would build IT projects for them. White and Voeller wondered: Why can't we do for those companies what we did for ourselves? As veterans of the engineering and IT worlds, White and Voeller saw similarities between the two—similarities that made the step from one business to the other seem relatively (and perhaps deceptively) small.

During all this soul-searching, the fledgling consulting group was trying to convince clients that it had the goods over behemoths like Andersen Consulting.

By the late 1990s, Black & Veatch's IT department had been consulting on outside projects for at least 10 years. Voeller personally worked on over 100 technical audits for other customers (including some competitors). Late in 1998, the IT department stuck its corporate toe further into consulting waters after signing a \$14 million contract with Southern Nuclear Power and an \$8 million contract with General Motors. Voeller believes handling these large contracts

At a Glance

COMPANY

Black & Veatch Solutions Group (BVSG)

SPIN-OFF DATE

January 1999

EMPLOYEES

More than 550

REVENUES

\$50 million

INDUSTRIES SERVED

Manufacturing, government, finance and insurance, health care, services and distribution

forced Black & Veatch's IT department to either succeed or to fail—long before the department officially became its own entity.

We Can Do This

Big changes came in January 1999, when Black & Veatch officially formed BVSG, appointing five partners from Black & Veatch's IT department and other divisions to head it, including White and Voeller. (Chief Operating Officer Brad Vaughan, Chief Project Officer Ron Hollrah and Chief Development Officer Dean Kothmann also joined the crew.) Black & Veatch handed its new child a challenge: to actively search for outside work while continuing to support the Black & Veatch team. BVSG beefed up staff, recruiting project managers and IT

professionals from outside the engineering world, bringing the total number of employees from 400 to more than 550.

The result? BVSG plans an IPO for sometime this year. By separating the companies now, says CEO Rodman, shareholders in Black & Veatch's employee stock ownership plan can reap the benefits of the technology craze without risking public ownership of the core business.

But high hopes don't guarantee smooth sailing. Even before the official spin-off date, BVSG had to work hard to prove itself outside the engineering arena. The two key problems of the IT department were its self-image and the perceptions of the outside world.

At the end of 1997, the Black & Veatch IT department spent much of its time marketing its knowledge—with disappointing results. Convincing clients that the group could hold its

own as technology gurus was tough. Finally, when a client revealed that he had turned to Black & Veatch because of its methodology, "the light bulb went on," says White. "We (originally) saw ourselves as technical experts, but we're really project management experts. We realized we were good at getting jobs done at a fixed cost and on time. That got people's attention." The realization, both liberating and humbling, rocked the core of the IT department, which

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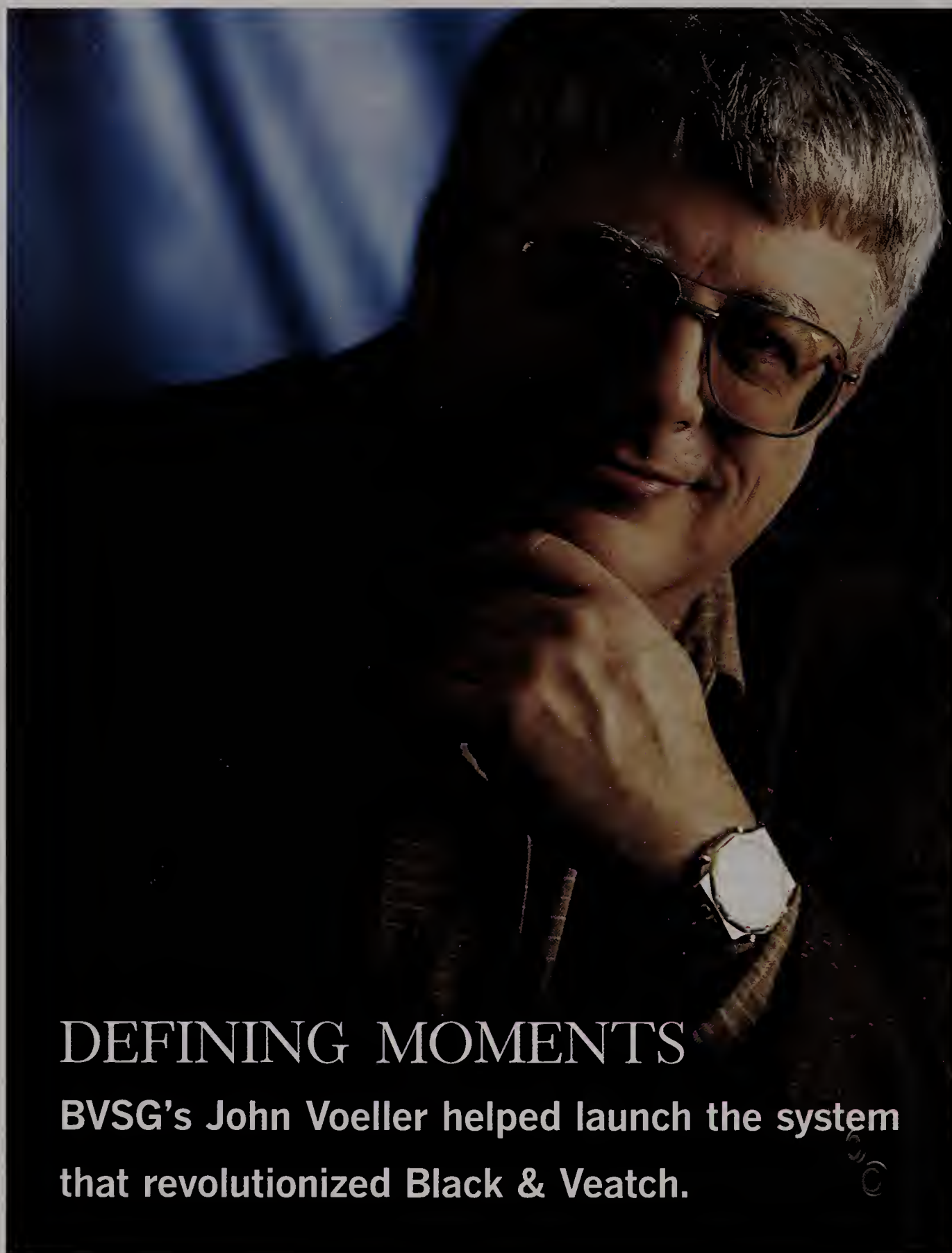
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DEFINING MOMENTS

BVSG's John Voeller helped launch the system that revolutionized Black & Veatch.

revamped its marketing operation, focusing on process and outcome.

During all this soul-searching, the fledgling consulting group was trying to convince clients that it had the goods over behemoths like Andersen Consulting. It wasn't easy. "We anticipated significant challenges in getting people to understand what we were capable of," says White. And those challenges arrived: Potential clients wondered not only how an engineering firm could handle their IT needs, they wondered if Black

& Veatch could understand the business reasons behind them. But the group was ready to meet those challenges. "It helped being a subsidiary of a consulting organization. What started off being a barrier, turned into an asset," says White. Once BVSG found it was able to convince clients that their process made all the difference, White says things changed. By late 1998, clients were plentiful, and the group felt more confident in its future—a future separate from Black & Veatch.

Stop Me If You've Heard This One Before

In the murky field of consulting, a field known for littering fresh-faced college graduates at work-sites for months, even years, BVSG says it is different. Four principles drive its contracts: fixed schedule, fixed price, guaranteed results and liquidated damages if BVSG doesn't come in on time—assurances, they say, the Big Five competitors wouldn't even think about offering. They want to make sure clients know exactly what their wish list will cost and how long it will take.

These guarantees, says Voeller, make all the difference in beating out the competition.

"We've gone up against the Big Five in places like General Motors. What we've witnessed is almost a level of disbelief in our methodology for software development."

Giga's Cecere doesn't buy the guaranteed results line. "It's a nice phrase but meaningless by itself. How do you define what doesn't work out? A guarantee is only as good as the quality of the firm itself." A successful consulting organization must factor in what he calls "a lot of slosh," that is, extra funding to provide proper training, documentation and



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help-desk support. "A bad consulting firm could do the job badly but still claim to live up to their contract," he cautions. And acres of gray area exist between the consultants' view of a successful IT job and the clients' view. Cecere doubts the BVSG assurances will really attract customers who are hip to consulting jargon and jaded by consulting firms.

The cynicism may develop because customers have seen other organizations break away from a parent company, with varying degrees of success. Hartford Technology Services became a separate business entity from The Hartford Financial Services Group three years ago (see "Breaking Away," *CIO*, May 1, 1998). The path for the Hartford, Conn.-based IT group has been rocky. According to company insiders, not only does HTS find balancing the needs of the parent company with those of new customers a challenge, but it has discovered something else: The culture of the company's core business changed when the IT department took on outside challenges. Some employees, suddenly under pressure to prove themselves daily, balked at the new climate. Enter new, challenging emotions like fear, risk and discomfort—which can bewilder, immobilize and eventually drive away a certain portion of the staff. And while the outlook for Hartford

Technology Services isn't entirely bleak, becoming truly profitable may take another two years, says one source—time a fledgling consulting firm may or may not have.

Death to other firms testing the consulting waters came from being unprepared corporatewide. Another complex spin-off came out of Lockheed Martin Defense Systems, which launched a 5,000-person IT consulting group in 1995. Like Black & Veatch, Lockheed believed its IT department's methodology could translate to the commercial sector. But the few clients it attracted found the methods complicated, the process time consuming. In addition, the marketing department—unaccustomed to selling IT services—broke down. The lesson? What might fly in a vertical market doesn't always translate to other industries.

Julie Gierra, a vice president at Giga Information Group, says the aspiration to spin off IT functions is almost epidemic. "We literally talk to two or three customers each week who want to do it—and there are so few who can succeed." The company may have winning software or methodology—but that's not always a magic potion. "What looks cool for, say, the defense industry will look to the banking industry like it's from another planet," says Gierra.

A Healthy Bottom Line

BVSG plays doctor to an ailing IT organization

What do building bridges and building health-care websites have in common? Plenty, if you ask Child Health Corp. of America (CHCA), which asked Black & Veatch Solutions Group (BVSG) to rescue it from its IT woes. The Shawnee Mission, Kan., company, which provides an alliance of children's health-care hospitals with products and services, had watched its IT needs grow along with its company, and the IT organization needed some help from the outside world.

After taking bids, CHCA settled on BVSG, which spun off from its parent company, Black and Veatch in 1999, to provide a sys-

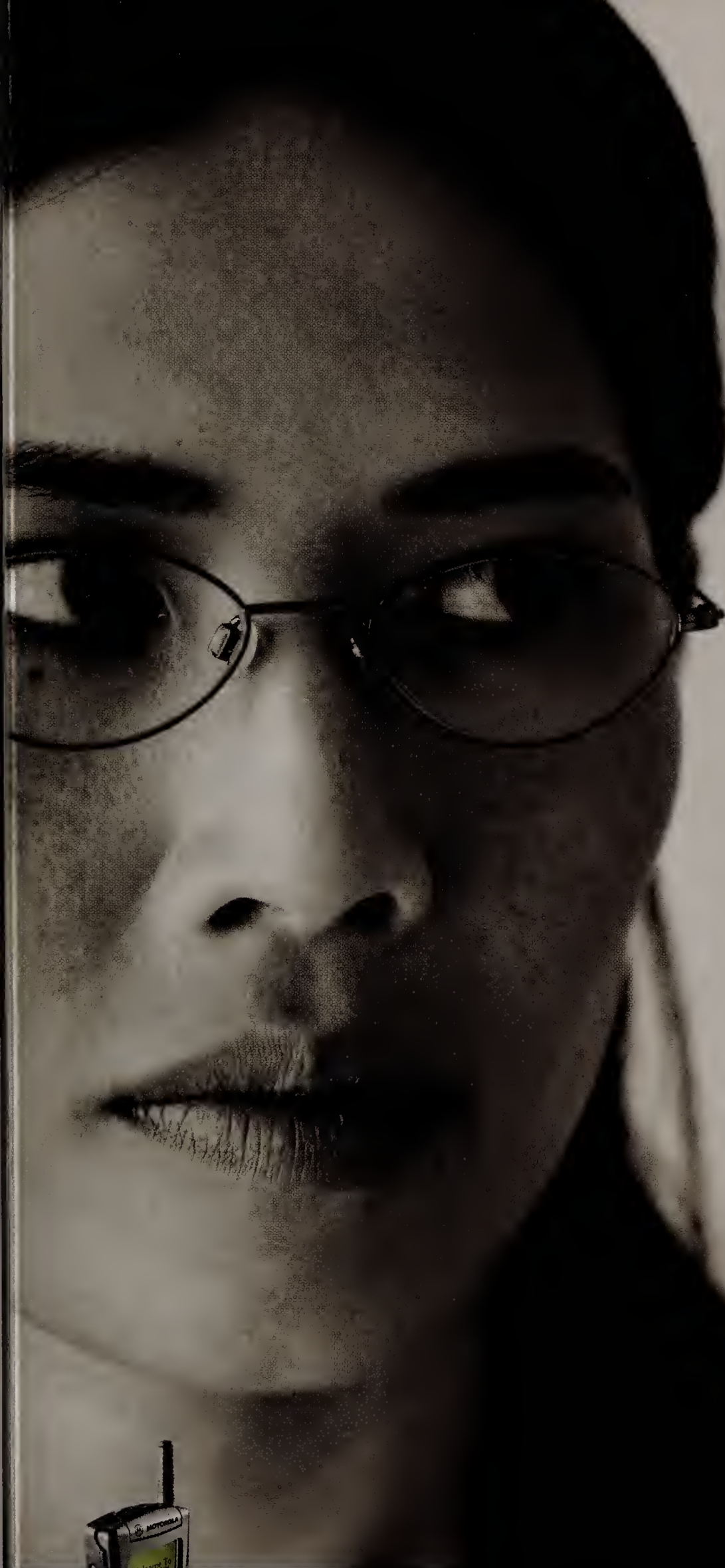
tem support plan, website design and project management. CHCA was impressed by BVSG's previous work with Blue Cross/Blue Shield and General Motors, according to Jim Cook, vice president of information technology services for CHCA. Mostly, CHCA valued what it calls BVSG's nonpartisan consulting approach. "We looked at other players and felt like they had an agenda. They were pushing their own products," says Cook.

Jeff Primovic, vice president of pharmacy with CHCA, works directly with BVSG on the eVaccines.com website, which, as part of the CHCA alliance, will

provide vaccine information to parents and allow health-care providers to order vaccines online.

More than anything else, Primovic appreciates BVSG's outsider perspective. "They have taken a lot of time to learn the business and how it works," says Primovic. "They challenge me and my team's thought processes. Not just technically but from an outsider's viewpoint that's been really positive." BVSG also turns work around quickly—sometimes a little too quickly. "They can turn things around faster than I can respond!" says Primovic.

—R. Lynch



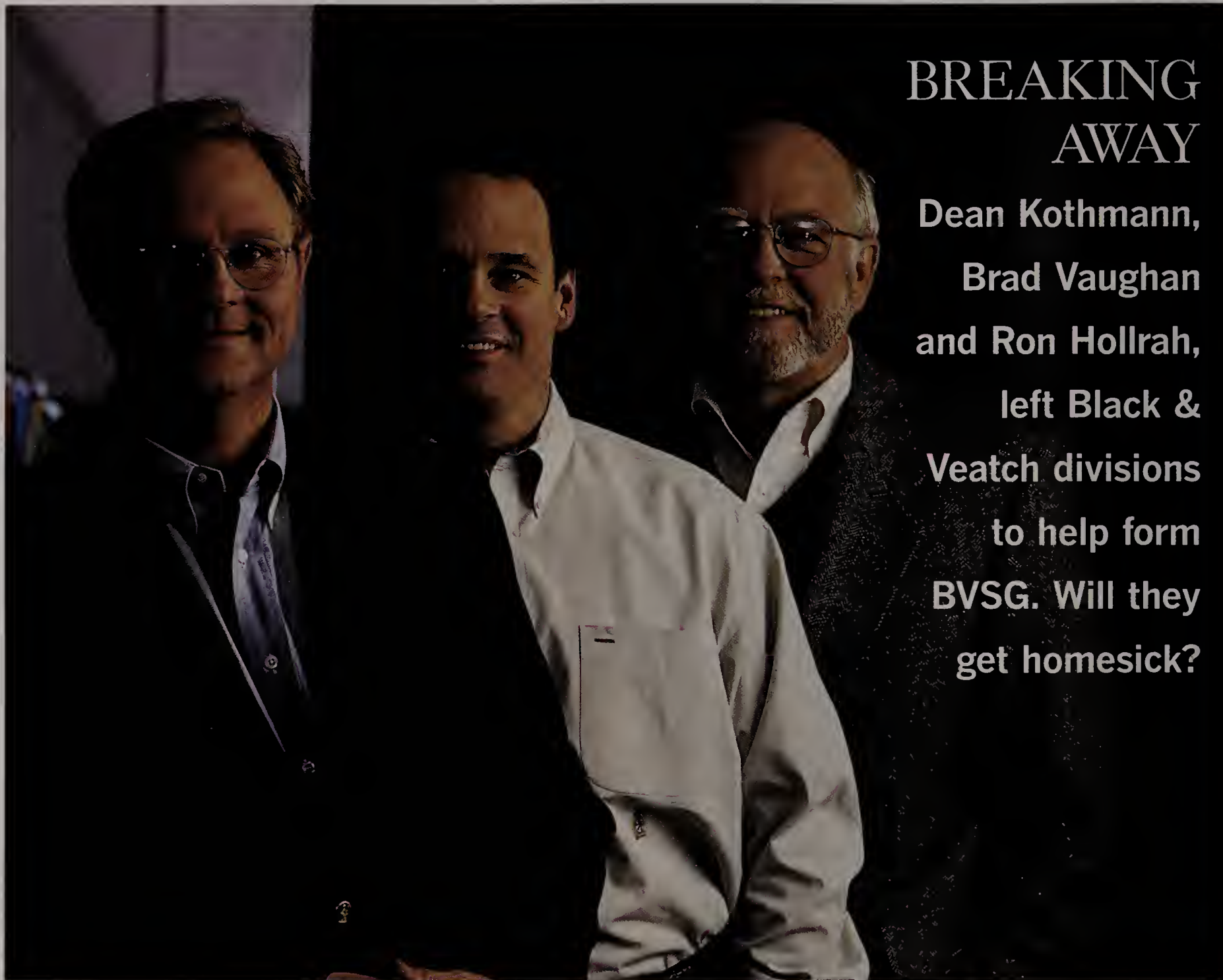
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BREAKING AWAY

**Dean Kothmann,
Brad Vaughan
and Ron Hollrah,
left Black &
Veatch divisions
to help form
BVSG. Will they
get homesick?**

In addition, separating from a parent company raises an allegiance issue. Does the fledgling IT organization's loyalty lie with new customers or with the parent company? If the processes that work for the parent customer don't work for the new customer, can—or will—they change? Who gets the organization's attention first? Gierra says flexibility is the key to success, something BVSG will need going forward. "Those who insist on their methodology are those who are asking for trouble," she cautions.

Against Some Odds

BVSG has an outsourcing agreement with Black & Veatch that makes the spin-off the sole provider of the engineering firm's IT services, and BVSG is aware of potential problems juggling the new clients with the old. "It takes a lot of work to bal-

ance the needs," says White. "If you get an exciting project from an outside customer, you'll have employees who want to move over." But he hopes that the fact that Black & Veatch continues to need new projects on the cutting edge of the IT world will keep IT workers interested in looking inside as well as out.

Even as BVSG is keeping an eye turned inward, it must remain flexible to and understanding of the needs of new customers. "We think of ourselves as solution providers," says Voeller. "We try to solve a situation, not purvey canned results." Voeller believes IT consultants usually come to the table with their own familiar bag of tricks. "If you say document management, they have one program they like, and they'll move you toward it." BVSG tries to get its hands and mind around the whole picture and then search for the solution—which may or may not include BVSG. "We say no to



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SAP implementations," says Voeller. "That's a high revenue opportunity, but we don't do it. Other companies do it very well." BVSG regularly turns down work it doesn't feel it can do well. "There are plenty of organizations we won't help," says Voeller. "We'll point them in another direction. Our allegiance is to having a high-quality project. We get that from being engineers. It allows you to have huge candor."

Long-Term Success?

But candor may not float the IT spin-off forever. Giga's Cecere wonders if the parallels between engineering and IT consulting are enough to justify the leap. "The pace of change is much

with it, but only if their people are extremely experienced and have a standard tool set." Does Cecere think BVSG has a shot at success? Perhaps, but "unless you have all the factors in place, it's tough to compete with the Andersens."

Julie Gierra also questions long-term success after this high-need era passes. "There is a skill shortage and tremendous growth right now," says Gierra, who points out that industry growth increased from 17 percent in 1998 to 24 percent in 1999. "Companies don't have inside skills, and it's attractive to find outside help. There is a big hole." According to Gierra, the need for consulting services can be attributed to two major IT pushes: Y2K and the explosion of the internet. Most connected companies had to allocate for Y2K, and now that

the millennium tech-threat is mostly history, companies are allocating resources to create a web presence. But once that's done the need for outside IT services may diminish.

Naysayers aside, a few companies have succeeded in IT consulting. For example, Royal Dutch/Shell Group, based in the Netherlands and United Kingdom, spun off its IT organization into Shell Services International Group of Companies (SSI) in 1998—with a balance sheet that now shows a combined revenue base of \$1 billion and assets of \$340 million. Today, SSI runs offices in nine countries, serves customers in 125 countries and employs more than 5,000 workers. What kept SSI afloat when others sank? "SSI took the time to understand the marketplace," says Gierra.

"They designed and put important functions in place first—support functions like training, help desk, pricing, a knowledgeable sales force and service level agreements."

"We've gone up against the Big Five in places like General Motors. What we've witnessed is almost a level of disbelief in our methodology for software development." —John Voeller

faster in IT," says Cecere. "A successful engineering project means the building doesn't fall down. Also, every construction project ends in litigation. That's how it is." In the IT consulting world, he says, the failure rate is higher, upkeep is more and litigation is a smaller issue. Although the process might seem similar, he says, the urgency and measure of success is not. For many companies looking to have their IT needs filled, the urges the child of an engineering firm might have to track documents can eat up precious resources.

Still, it's an IT-needy world out there. Success over the short term isn't unreasonable. "It takes a lot of ineptness to screw up consulting," says Cecere. "You can be successful for a bit, but to sustain for an extended period of time will be the trick. It will require quality and something that is a differentiator."

Cecere says BVSG needs to learn how to manage consulting for IT—from moving information along the pipeline to marketing to billing, something the group has done well in the engineering business. They also need to set up the infrastructure before needy customers hammer them. "If they're good at establishing and controlling resources, they can do well

Ready, Set, Consult!

Whether industry watchers look on with skepticism or optimism, BVSG feels it has the goods to compete over the long haul. Voeller says the BVSG difference lies somewhere between artistry and skill. "Real artistry comes when you have a group of strangers together in a room," says Voeller. "The client may be unclear on what it is they want. You have a set time frame and a daunting task." Without the proper consulting skills, the group will go nowhere. It takes a consulting expert to help the client figure out what they need, identify platforms and software, and take them from A to Z. "That," says Voeller, "is art." **CIO**

What's your take on IT spin-offs? E-mail Features Editor Meg Mitchell at mmitchell@cio.com. Rebecca Lynch is a freelance writer based in Wayland, Mass.

THE BUSINESS VALUE OF CERTIFIED APPLICATIONS

Business applications are only as good as the care and quality that go into building them.

PUT TO THE TEST

Matthew Parsons, of Pfizer Inc., helped develop the challenging new specification for the Windows® 2000 certification program.



Not scheduled for a tropical vacation this year? If TCO for your corporate technologies went south instead, some of your IT headaches could disappear anyway. | **By Bill Laberis**

CERTIFIED APPLICATIONS: TAKING CARE OF BUSINESS

FOR A TECHNOLOGY TO HAVE maximum value, it must deliver core benefits to IT and to the organization. Simply put, these core benefits must make life better and the job easier for IT while lowering the technology's total cost of ownership (TCO) for the company.

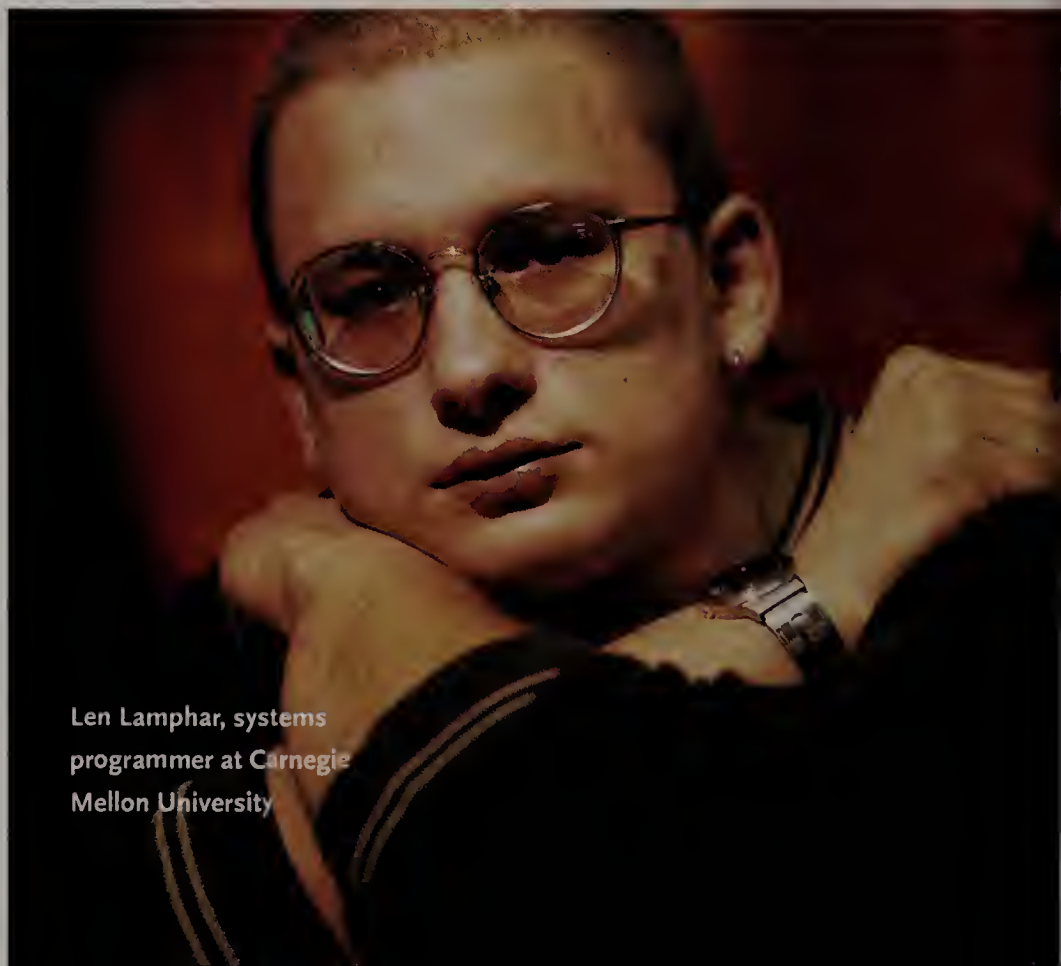
You can probably count on one hand, without affecting your typing speed, the number of times a major product or technology has delivered on both promises. Thus, if something new comes along claiming such double-barreled value, your skepticism meter ticks up a notch or two. That was to be expected. Before now.

Available for users today, with more waiting in the wings, is an elite corps of applications which have been certified to make maximum use of the wealth of features in Microsoft's®



Windows® 2000 operating system. These Windows 2000-certified applications provide users with the richest possible Windows 2000 experience and have passed a tightly controlled, independently verified testing process unlike any before.

In addition to the Windows 2000-certified applications, there are currently more than 7,000 non-certified applications that also run on Windows 2000. But the certification process and the applications that



Len Lamphar, systems programmer at Carnegie Mellon University

stand up to its test have been designed from the ground up to improve the overall quality of IT life, while making your organization more productive.

GETTING WHAT YOU NEED

What would make your life easier and your job better? If you have many PCs, workstations and notebooks in your management purview, then greater application reliability and management probably top your list of criteria for an improved worklife. And if you can improve reliability and management, preserve your company's investment in these technologies, and simultaneously deploy applications more quickly, then TCO will head south, where you want it to go.

For IT and the company to realize such benefits, several things must occur at the application-deployment and upgrade levels.

- ▶ Applications must install in a standard, unified way. This avoids costly rescripting of new software, while minimizing the "DLL hell" of conflicts among shared components.
- ▶ New applications software must integrate cleanly with all the existing software already up and running.
- ▶ The system must meet the demands of mobile professionals who increasingly insist upon going anywhere on the network and using any available machine there. These folks also want to see their individual user preferences on any machine they happen to use.
- ▶ Applications must run reliably in today's highly controlled and secure network environments, enabling administrators to control desktops even in a lockdown situation.

MAKING IT HAPPEN

For more than two years, a team of 10 major user organizations, several independent software vendors, and Microsoft have labored to produce the Application Specification for Windows 2000. The purpose of this detailed specification is to ensure that the ap-

plications certified under its rigorous standards fulfill the promise of the points above. The specification is a roadmap for building highly reliable applications on Windows 2000, and certification is a guarantee to the user that the application will fully exploit the benefits and new features of Windows 2000.

How tough are the specification and the certification process themselves? Greg Dowling, Managing Director at Credit Suisse First Boston, acknowledges that application vendors adhering to the specification may find the process difficult and demanding.

"But the benefits to those of us in the user community are substantial," notes Dowling, who helped draft the specification. "We are certainly going to use the specification as the basis for a standard for our internal developers. One of the things we certainly plan to do is include adherence to this specification as part of our software purchase criteria."

Another IT manager who helped Microsoft draft the specification is Matthew Parsons, of Pfizer Inc. Parsons, whose group deploys and supports both desktop and mobile network applications, says the specification accurately reflects, "on all the big items," the feedback developers gave Microsoft at the outset to maximize the business value of applications written to the specification.

"We see the Windows 2000 Application Specification as a valuable tool that we can use to evaluate software purchases. Applications that meet these specifications increase manageability and reduce our cost of ownership. We plan to incorporate compliance with this specification into our purchase criteria for new applications."

—Tracy Futhy, Executive Director at Carnegie Mellon University

Inside

- 5 Caere Corp.**
Leaving the Paper Behind
- 6 Alibre Inc.**
Through Thick and Thin
- 7 Executive Software International Inc.**
Raising the Bar
- 9 Gemplus S.C.A.**
Smart Solutions
- 10 Damgaard A/S**
Future Proof
- 11 WRQ Inc.**
Mirror, Mirror
- 12 PTC**
Taking it With You

AN ELITE CLUB

The rigor of certifying applications in compliance with the application specification is not lost on software developers either. The high certification bar notwithstanding, Microsoft has seen significant momentum for certification in its early stages. That momentum is related to the ultimate user benefits of certification, which place the emphasis squarely on quality of the applications certified, not quantity. This is also what gives the Certified for Windows 2000 logo exceptional meaning, because it is proof that the application will exploit the rich features of Windows 2000 to the greatest possible extent.

"The certification process certainly is harder," reports Rajiv Agrawal, director/research & development, PTC, Waltham, Mass., a developer of design and engineering software. "It is a very rigorous process," confirms Andy Staffer, director/research, Executive Software International Inc., Glendale, Calif., the developer of Diskkeeper, a disk defragmentation tool. While both developers agree that the Windows 2000 certification process is significantly more detailed and involved than previous certification programs, they also concur that this extra effort is just what is needed



Major IT Benefits Of Windows® Certified Applications

Here's how Windows® 2000-certified applications give users the most reliable and productive experience on the Windows 2000 platform:

- ▶ Certified applications provide a uniform, standard and robust installation that is self-repairing and which minimizes conflicts among shared system components — the so-called "DLL hell." Certified applications use side-by-side DLLs and protect Windows 2000 system files. For example, if important application files and DLLs are accidentally deleted, desktop applications that are certified can repair themselves "on the fly."
- ▶ Certified applications use IntelliMirror™ technology to offer mobile or roaming users correctly maintained user preferences and computer settings. IntelliMirror technology also supports multiple users per machine and helps regenerate application settings when machines must be replaced. Administrators can install applications remotely, even on locked-down desktops.
- ▶ Network administrators can secure and control corporate desktops while running Windows 2000-certified applications in a controlled network environment or in a lockdown setting. Since they are assured that certified applications will run in a lockdown setting, administrators can reduce TCO by locking-down desktops to reduce the chance of errors created by users.
- ▶ For applications that are backward-certified on earlier platforms, Windows 2000-certified applications provide a seamless, controlled transition of the application for users who upgrade from previous versions of Windows to Windows 2000 Professional. Certification ensures compatibility among applications, the key to preserving the current IT investment.
- ▶ Support for OnNow power management in certified applications gives a PC the same instant availability that people expect from TVs and other common appliances, while reducing overall power consumption.
- ▶ Windows 2000-certified applications lower their overall cost of ownership through a consistent user interface which reduces training, support and testing costs. These applications can also assist users with specific needs, such as creating custom dictionaries.
- ▶ Certified applications promote greater accessibility standards in that persons with disabilities can use compliant software more easily.

IT managers can find further information on these and other features and benefits of Windows 2000-certified applications at <http://www.microsoft.com/windows2000/upgrade/compat/certified.asp>

to give users applications that are optimized to the fullest for Windows 2000. For example, developers appreciate that the certification process ensures that a product behaves correctly in the Windows 2000 environment, such as by minimizing conflicts among shared components.

Both PTC and Executive Software are among the first vendors to earn the Certified for Windows 2000 logo for their packages (see related stories, pages 5-12).

IMPROVING IT'S WORLD — ONE APPLICATION AT A TIME

"The specification is excellent," says Len Lamphar, systems programmer at Carnegie Mellon University, long recognized as a test cell and seedbed for major new information technologies. "We can take a package off the shelf, see that it has this [Certified for Windows 2000] logo on there, and know immediately it will perform correctly in an environment such as ours."

Noting that "DLL hell is a reality...

that could make every software installation something of a magical event," Pfizer's Parsons applauds the Windows Installer feature for its "significant" time-, and therefore money-saving, attributes, as well as for its overall ability to allow him to deploy applications with far greater consistency and without costly rescripting.

Parsons, who supports a far-flung user organization that includes many mobile professionals, also appreciates the built-in IntelliMirror™ management technologies that mirror systems, data and applications on a server. "Without IntelliMirror, we did a lot of custom coding to do what IntelliMirror does right out of the box," Parsons notes. "Now, for mobile users, we have custom roaming capabilities built right into the OS and the application."

GartnerGroup, renowned for its own tough brand of technology evaluations, noted that organizations using Windows 2000-certified applications will potentially increase the stability of their systems while lowering TCO through decreasing overall support, systems research, planning and product management, and user downtime. In its 1999 Research Note "The Windows 2000 Logo: More Teeth Added," GartnerGroup's Michael Silver determined that users could reduce desktop TCO by 27 percent by using certified applications, primarily because certified applications can leverage the Zero Administration Windows features of Windows 2000 for user profile management and software distribution.

The bottom line, as seen by GartnerGroup, is that "Managers who want to take advantage of Windows 2000 features should encourage their developers to follow Microsoft's appli-

continued on page 8

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Each of the following seven companies markets desktop applications that have earned the Certified for Windows 2000 logo. Certification testing for server applications began in February, 2000. by Alan Radding

CAERE CORP. | As the first application certified for Windows® 2000 Professional, OmniPage Pro 10® delivers a host of new benefits to the OCR market.

LEAVING THE PAPER BEHIND

WINDOWS® 2000 CERTIFICATION is very important to us, a necessity in fact, to ensure our users that they will have no problems with our product," declares Natalie Miller, OmniPage Pro 10® product manager, Caere® Corp., Los Gatos, Calif. The company released OmniPage Pro 10 in October, 1999, and took it immediately for certification testing by VeriTest, the independent testing lab designated by Microsoft®. By mid-October, OmniPage Pro 10 became the first application certified for Windows 2000 Professional.

"OmniPage Pro 10 has proven its ability to be a premier Windows 2000-based application by passing the Certified for Windows 2000 requirement," declared Jim Allchin, senior vice president of Platforms, Microsoft Corp. "Rigorous testing has verified that OmniPage Pro® will be easy to deploy and manage in a Windows 2000 enterprise environment, providing features like self-repairing application, install-on-demand, and mobile features for power management and roaming users."

IMPROVED QUALITY

The extensive testing required for Windows 2000 certification has greatly improved the quality of Windows 2000-certified applications such as OmniPage Pro. For example, streamlined installation processes and system policies help corporations control deployment more effectively. Also, there is less chance for certified applications to conflict with each other, thereby increasing the reliability of the system, Miller reports.

The certification process also benefits mobile users. "The certification requires the applications to store user

data under special folders [My Documents]. The folders can easily roam with the user. As a result, users are no longer tied to a single system, and they no longer have to customize each system separately as they desire," Miller continues. Also, key application data, such as user preferences, application state information, and temp files can be classified in various ways to support roaming and non-roaming users.

BEYOND THE PRINTED PAGE

Caere describes OmniPage Pro as the world's leading optical character recognition (OCR) application. It enables users to convert static, scanned images into dynamic, computer-editable text for use in word processing and other text-based applications. With a scanner and an OCR application, users can essentially eliminate retyping printed paper documents. OmniPage Pro includes a new OCR engine that produces the highest level of accuracy among significant desktop OCR applications. The latest version includes new and enhanced features for improved format retention, ease-of-use and robustness, including voice read-back of OCR results. Also included with the product is OmniPage Web Personal Edition®, Caere's pioneering paper-to-Web solution.

At this early stage, having the Windows 2000 certification gives Caere bragging rights and conveys a certain "cool factor" notes Miller. The real value over the long term will come as customers, particularly large organizations, recognize that OmniPage Pro 10 will be easy to deploy on Windows 2000. "Customers see it as a Windows stamp of approval."*

ALIBRE INC. | New features built in to Alibre Design™ take full advantage of the Windows® 2000 environment to help designers collaborate over the Web.

THROUGH AND THICK THIN

WHY IS A WEB-BASED application service provider (ASP) sporting the Certified for Windows® 2000 logo? ASPs typically use thin clients, bulked-up temporarily by Java applets if necessary. But Alibre™ isn't a typical ASP. "We're a Web-based application, but we're not pure Java or a thin client. We use smart clients and benefit from a workstation-class computer on the desk," explains Paul Grayson, president/CEO, Alibre Inc., Richardson, Texas. The smart software Alibre requires on the Windows 2000 desktop is Windows 2000 certified.

BUILT TO SUIT

Alibre provides an architecture that benefits from the distributed nature of the Internet. Strategically aligned with Microsoft®, Alibre takes advantage of new technologies within Windows 2000, such as COM+ and the Active Directory™ Service. Alibre is also working closely with Microsoft to support Windows DNA (Distributed InterNet Applications Architecture) to foster design-team communication and data-sharing among engineers.

"Windows 2000 Server is more reliable and secure, and the Active Directory provides a secure framework to manage authentication of subscribers for our mechanical design service," Grayson continues. The result: Windows 2000 can scale to support any enterprise environment because it has the ability to upgrade servers and add processors to match the computational requirements of a given design project.

Alibre Design™, the company's Windows 2000 design solution, provides 3D solid modeling, which allows designers to create prototypes of products intended for manufacture. The company is aiming Alibre Design at small design and manufacturing shops. Users will run Alibre Design on a Windows 2000 Professional-based workstation and connect with the Alibre ASP site on the Web for additional services and for real-time collaboration. "Engineers can actually edit a CAD model in real time, not just view it or comment on it," Grayson notes. In addition, they can share data over the Web and manage dispersed teams.



Paul Grayson,
president/CEO,
Alibre Inc.

ENGINEERING FROM THE GROUND UP

Although Windows 2000 certification is more demanding than previous certification efforts, the certification process has not hindered Alibre's development. "We have been working on this product for two years and took certification into consideration from early on. You don't want to wait until the end," says Grayson. The Windows 2000 certification requirements, he adds, "are like a roadmap to guide you in safe Windows[-based] development."

Specifically, the certification process significantly augments Alibre's internal quality assurance processes, due to

the extensive range of tests comprising the certification suite. Certification also ensures that Alibre Design will behave in the same way as any other certified application that a customer may be using, with no unwanted surprises.

"The people who manage IT and users themselves will know what to expect when they use Alibre Design, and we are better able to support them since our application has been extensively tested," he explains.

IT organizations will also benefit from the new Windows 2000 install process. "Windows 2000 certification guarantees that the install and uninstall of Alibre Design conforms to the standards with no unexpected file replacement or deletion," explains Grayson. Windows 2000 Server also provides for centralized management and distribution of applications.

"Windows 2000 certification guarantees that the install and uninstall of Alibre Design conforms to the standards with no unexpected file replacement or deletion."

—Paul Grayson, president/CEO, Alibre Inc.

The Windows 2000 certification they have earned represents an important part of Alibre's strategy. "Our customers expect us to be Windows 2000 certified. It makes them feel comfortable," notes Grayson. IT and end users alike take comfort from the Windows and Microsoft Internet Explorer user interface conventions that are part of the certification specification, ensuring that Alibre Design is easy to use and intuitive. Similarly, certification guarantees that Alibre Design's functions in areas such as menus, number of mouse clicks, opening and closing the application, and other look-and-feel issues will be familiar to end users and to IT support. Finally, by conforming to the Windows 2000 standards for user accessibility, Alibre also made their product more accessible to customers with special needs.*

All applications seeking to earn the Certified for Windows® 2000 logo must pass the strict certification test administered by VeriTest, the leading independent software testing company with offices in Los Angeles, Paris

and Tokyo. VeriTest makes all test results publicly available, including exceptions granted in the testing process and the reasons for those exceptions. You can view the past results, as

well as an updated list of certified applications or applications well on the road to certification, by going to <http://www.microsoft.com/windows2000/upgrade/compat/certified.asp>.



EXECUTIVE SOFTWARE INTERNATIONAL INC.

Diskeeper 5.0 sets a new standard for disk defragmentation utilities.

RAISING THE BAR

IT TOOK SEVERAL days to complete Windows® 2000 certification testing for Diskeeper 5.0, the disk defragmentation utility from Executive Software International Inc., Glendale, Calif. By comparison, less rigorous logo compliance for its previous Windows releases took about a day, recalls Andy Staffer, director of research. "The Windows 2000 certification process has hundreds of pages of test procedures and is much more rigorous," he concludes.

A HELPING HAND

But the extra effort is worth it. By following the certification specification, Executive Software ensured that Diskeeper 5.0 works for disabled users, which helps organizations comply with various government mandates to accommodate employees with disabilities. Previous releases of Diskeeper had built-in support for disabled users, but it wasn't consistent. "Because of the certification process, we had to look at every dialog box and make

sure it worked for disabled users," Staffer explains.

Executive Software found the certification concept of Advertisement another big advantage. Advertisement posts notification of an application's availability, even if the application's files have not been installed on the system. The advertised application can then be deployed, using software management tools. This is an important consideration for IT organizations faced with deploying an application like Diskeeper across hundreds, or thousands, of desktops. "Advertisement can save systems administrators a lot of work," notes Staffer.

Complying with the certification process also helped Executive Software produce a better product for mobile users, for whom power management is a critical concern. "We totally tapped into the Windows 2000 power

"We take Windows 2000 certification very seriously."

—Andy Staffer, director of research, Executive Software International Inc.



Andy Staffer, director
of research, Executive
Software International Inc.

ANDREA MAROUK

management capabilities," Staffer reports. Diskeeper requires considerable power to complete a full defragmentation. Working with Windows 2000, Diskeeper 5.0 recognizes when there isn't sufficient battery power to complete a task and shuts itself down, preventing potential problems.

CERTIFIABLY CONFIDENT

Achieving Windows 2000 certification is important to the company. "It gives our customers a feeling of confidence in the product. It is a sign that the product meets very stringent quality standards," says Staffer.

Microsoft® agrees. "We are delighted to recognize Diskeeper 5.0 as the first utility to pass our Certified for Windows 2000 program," said Deborah Willingham, vice president, Business Enterprise Division, Microsoft Corp., in a company announcement. "By ensuring that their solution is as reliable and manageable as possible, this certification validates Executive Software's reputation as a provider of premier utilities for the enterprise market."

Diskeeper 5.0 for Windows 2000 is backward-compatible with earlier versions of Diskeeper and features three major technological breakthroughs: Frag Guard, a fragmentation-prevention technology; automatic scheduling and network controls for mixed Windows 95/98 and Windows NT/Windows 2000 environments; and online directory consolidation.

Overall, Executive Software feels that Windows 2000 certification has raised the bar of software quality, which is a clear win for both IT and end users. Quality is so important, in fact, that the company incorporated certification requirements into the earliest designs for Diskeeper 5.0. "We take Windows 2000 certification very seriously," Staffer asserts. Next on the company's agenda is to certify its undelete product for Windows 2000.*

continued from page 4
cation specifications when developing new applications."

WHAT A WONDERFUL WORLD IT WOULD BE

Encouraging the use of certified applications is exactly what Greg Dowling of Credit Suisse First Boston is planning to do for his organization and its installed base of some 15,000 PCs worldwide. Of the many aspects of certified applications that appeal to him, one of the most appealing is the Windows Installer service, which ensures the quickest and easiest deployment of corporate applications.

At Credit Suisse First Boston, it is not unusual for IT to release 30 or

more software modifications in a single week to support the very dynamic nature of the investment bank's core businesses. IT had to find a way to manage this chore while keeping the

"[With a certified application] ...We know we can install it and maintain it in our NT environment without trampling on the rest of the environment. So we feel quite strongly that we don't want to buy software that doesn't obey these standards."

—Greg Dowling, Managing Director, Credit Suisse First Boston

operating system stable, and without breaking the bank with numerous special modifications of each upgrade to ensure stability.

How well does Dowling anticipate the Windows Installer will work for him? "We look forward to a world where all applications are installed using the Windows Installer service, where all the problems we typically have today where applications are interfering with each other, and preventing each other from working properly, will go away," he says. "That's where we want to be." *

Bill Laberis is president of Bill Laberis Associates and former Editor in Chief of Computerworld.

GEMPLUS S.C.A. | Lowering training and support costs for users were top priorities for Gemplus® as they pursued their goal of Windows® 2000 certification.

SMART SOLUTIONS

IS THERE A SMART card in your future? If you use a cellular phone, you probably have a smart card tucked into your phone now, or will in future. In 1999, Gemplus® made 500 million smart cards, which were used primarily in mobile telephones. And the numbers are only going up. The company is an independent hardware vendor, which builds Windows® 2000-certified software into its smart card products.

Gemplus® S.C.A., Redwood Shores, Calif., is the world's leading provider of plastic and smart card-based solutions, according to Dataquest. Founded in 1988, Gemplus has successfully implemented portable and secure smart card-based solutions to simplify a wide range of applications ranging from public and wireless communications to electronic business.

A SECURE FUTURE

For Windows 2000 users, smart cards will play a key role in network security. As network-based activities such as electronic business expand, the demand for a secure environment increases. In order to address these security demands, various network security systems have been devel-

oped based on a Public Key Infrastructure (PKI), which is considered the standard for secure distributed applications.

GemSAFE™ Enterprise, the company's Windows 2000 Professional-certified solution, addresses PKI security concerns by enhancing a corporate PKI implementation. GemSAFE Enterprise is a desktop solution that adds portability and ease-of-use to network security by tapping the inherent benefits of smart cards to provide more reliable authentication of the user. In addition, GemSAFE Enterprise sets the stage for future smart card applications beyond network security, explains Scott Smith, director/product management and marketing at Gemplus.

As a Windows 2000 product, GemSAFE Enterprise had to meet the demanding certification specification. "It required some extra work to meet all the requirements for install, uninstall, [and] power management, but it paid off," concludes Smith. For instance, the new remote installation and management capabilities built into GemSAFE Enterprise benefit system administrators. Similarly, self-repairing installations make the install

process more reliable. Previously, Smith notes, problems resulted from incorrect and incomplete installs. "When users are using products with incomplete installations, who knows what will happen? Through certification, we eliminate this problem," he explains.

TCO: HOW LOW CAN YOU GO?

Certification has particularly improved the remote install process. "For administrators to install our components remotely is an important feature for us

install Gemplus smart-card reader hardware while the software is installed and supported remotely by an administrator. This capability, he expects, will be very important to users and can save administration and IT time when adding new devices.

Windows 2000 Professional's power management is another benefit for Gemplus customers. GemSAFE Enterprise is a security application. IT managers need the reassurance that security will not be compromised when a machine goes into power-manage-

"Certification means the software will be well-behaved, particularly in terms of correct and complete installation."

—Scott Smith, director/product management and marketing, Gemplus S.C.A.

and helps us remove objections during the sales process," explains Smith. Certification addresses remote installs through the required MSI file, which describes how the product will be installed remotely. "This is important because GemSAFE™ Enterprise Workstation is supposed to run on the client, which often requires remote installation," he continues. Because of the remote installation capabilities of Windows 2000, a user can

ment mode. "The certification process ensures we support power management features and operate correctly," Smith reports.

Customers will benefit immediately from the consistency of behavior found in certified applications. "Certification means the software will be well-behaved, particularly in terms of correct and complete installation. It is not, however, a quality test. Quality is our responsibility," Smith insists. But the certification

specification, he adds, helps the internal quality assurance effort by providing another checklist and third-party testing.

Ultimately, both IT and users will benefit from GemSAFE Windows 2000 certification. Smith concludes: "By focusing on the certification process, we have added features to our product that help organizations lower cost of ownership through remote installation and a consistent look and feel, which reduces training and support costs." *

DAMGAARD A/S | In the highly competitive world of ERP applications, Damgaard aims to be the top choice.

FUTURE PROOF

dAMGAARD A/S, Copenhagen, Denmark, needs the best product it can deliver if it is to thrive in its chosen market segment: the hotly contested enterprise resource planning (ERP) segment. By meeting the Windows® 2000 certification requirements, the company has been able to bolster AXAPTA®, its ERP solution for midsize companies, in several critical ways.

Damgaard's AXAPTA is designed for multinational companies that need a flexible way to standardize their worldwide operations. AXAPTA is an integrated enterprise solution covering finance, supply-chain management, customer relationships, logistics, project management and manufacturing — all of which can be accessed via the Internet, third-party products, or custom-built applications.

EYES ON THE PRIZE

Windows 2000 certification assures IT managers that AXAPTA will continue to support the industry's new directions in the future. Damgaard, which prides itself on staying on the cutting edge of technology, has closely followed Microsoft's lead in technology. "We see Microsoft as headed in the right direction for the future," explains Daniel Bévort, strategic alliance coordinator. Being the first ERP product to achieve Windows 2000 certification confirms the company's commitment to advanced technology and its confidence in the Microsoft strategy.

Among the other benefits of AXAPTA's Windows 2000 certification is that "the IT organization will gain from the standardized deployment provided through Windows 2000," notes Bévort. Although ERP solutions can be notoriously difficult to install, IT will experience a simplified, consistent AXAPTA installation that fol-

lows the stringent Windows 2000 install requirements. "The entire installation procedure is more consistent, stable, and controllable. Files, for example, can only be written to certain places," he adds. Because of its built-in support for Windows Active Directory™, IT will also gain from centralized management of the application.

Another benefit from Windows 2000 certification that will prove popular with IT and end users alike, Bévort continues, is the new standby mode. "This provides a very fast way to effectively shut down, and then bring back, the application," he explains. Previously, IT has absorbed the brunt of user complaints about slow shut-down and start-up.

Windows 2000 certification also means that IT will see results from correct maintenance of user preferences and computer settings for people who use several computers. It will also be easier for IT to support multiple users per computer. Windows 2000 certification standards allow AXAPTA to run in a tightly controlled network environment, which lets network administrators secure and manage corporate desktops. Finally, the consistent user interface and accessibility standards required by the certification standards reduce IT's support burden and lower training costs.

As a result of all these changes, Damgaard expects Windows 2000 certification to reduce the total cost of ownership for a product like AXAPTA. "The improved manageability and installation means that it will be much easier for IT to roll out the application to hundreds of users," Bévort says. Easier installation and manageability mean fewer IT resources are required, which translates directly into a lower cost of ownership of the product.*

Certification Momentum

The following companies have applications that are well along the path to Windows 2000 certification:

- ▶ Agresso Group ASA
- ▶ Argent Software Inc.
- ▶ BMC Software Inc.
- ▶ Citrix Systems Inc.
- ▶ Damgaard A/S
- ▶ FastLane Technologies Inc.
- ▶ FileNET Corporation USA
- ▶ Gemplus S.C.A.
- ▶ Lane System Solutions
- ▶ Logility Inc.
- ▶ Mission Critical Software Inc.
- ▶ Motiva Software Corporation
- ▶ Navision Software A/S
- ▶ NetIQ Corporation
- ▶ Pivotal Corporation
- ▶ pragma Systems Corporation
- ▶ Scala Business Solutions
- ▶ TIDAL Software
- ▶ Trend Micro Inc.
- ▶ VERITAS Software



WRQ INC. | When your job is to show your customers what their computers have inside, you had better provide a clear picture.

MIRROR, MIRROR

WINDOWS® 2000 certification was high on the WRQ agenda. The Seattle, Wash.-based company provides Windows®-based terminal emulation software, WRQ Reflection®, which allows Windows-based desktops to connect to mainframes. The software runs on Windows 95, Windows 98, Windows NT®, and now on Windows 2000. "We offer connectivity software, and our customers expect that it will work right," says Sue Lindsey, WRQ Reflection marketing manager. Certification helps ensure that it will.

WRQ Inc. customers use WRQ Reflection to provide connectivity between PC desktops and host systems such as IBM mainframes and AS/400s, HP 3000, UNIX, OpenVMS, and Xsystems. Windows 2000 certification reassures IT managers that the WRQ product will behave properly in the Windows 2000 environment as it delivers reliable terminal emulation and connectivity between the PC desktops and their host systems.

RELIABILITY AND MANAGEABILITY

By meeting the Windows

2000 certification specification, WRQ was able to add features that both Windows users and IT recognize and appreciate. For example, by using the Microsoft® Windows Installer within WRQ Reflection, the company was able to create an installation program that is easily recognizable to many Windows users. The benefits of consistency go beyond familiarity: they allow WRQ to deliver a product that does not require additional training for users, resulting in a lower total cost of ownership of the product.

Microsoft also recognizes the importance of WRQ's host connectivity. "Organizations want to know that their Windows 2000 environment will be interoperable with their current host systems," says Deborah Willingham, vice president, Business Enterprise Division, Microsoft Corp., commenting on WRQ's Windows 2000 cer-

JOHN E. HOLLINGSWORTH

Sue Lindsey,
WRQ Reflection
marketing manager

tified for Windows 2000 Specification, and our joint customers can be assured of a reliable, manageable solution."

WRQ Reflection for HP 8.0 host access software, which will ship in February,

cludes the Active Directory™ Service, Windows Installer, fully integrated Visual Basic® for Applications (VBA) 6.0, and centralized management tools. WRQ Reflection 8.0 will also support previous versions of

"We offer connectivity software, and our customers expect that it will work right."

—Sue Lindsey, WRQ Reflection marketing manager

tification. "WRQ has acted quickly to take advantage of the great technologies in Windows 2000. WRQ Reflection has passed the Cer-

2000, is the first product in the WRQ Reflection® 8.0 suite to receive the Windows 2000 certification. WRQ Reflection 8.0 in-

Windows including Windows NT 4.0, Windows 98 and Windows 95. This means users can access mission-critical information

stored on host systems from all Windows operating systems, according to WRQ.

MORE THAN A PRETTY FACE

Terminal-emulation, or host-access, software may not be the most glamorous application, but it is vitally important, Lindsey explains. Using a Windows 2000-certified product such as WRQ Reflection means that IT can be confident that the terminal emulation product on the PC desktop will behave properly, allowing IT to concentrate on back-end systems.

In the fast-moving connectivity market, being first-to-market with a new feature, especially one as significant as Windows 2000 certification, is an advantage. Customers and IT will appreciate the extra attention to detail, such as easy install and remote management, which certification represents. They will also benefit from the third-party testing and independent assessment that augments the normal quality-assurance work routinely performed by WRQ. "The certification," Lindsey concludes, "gives IT and end users a clear sign that WRQ has done the work necessary to ensure our products will work as expected."*



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TAKING IT WITH YOU

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ACED WITH A CLEAR shift to Microsoft® Windows® among its customer base, PTC, based in Waltham, Mass., regards

Windows® 2000 certification as a must-have requirement. "It is viewed as a sign that the product has a certain level of quality," explains Dan Starr, PTC director of strategic marketing. Certification gives both IT and end users a greater level of comfort. They are reassured through the certification program's independent testing that the product has met stringent requirements.

ENHANCED DESIGN

PTC's first Windows 2000-certified product is Pro/DESKTOP™ 2000, a tool that enables conceptual engineers to capture ideas rapidly and to explore design possibilities. With Pro/DESKTOP, engineers can start work in 2D and the corresponding 3D design transparently evolves, while automatically leveraging 100 percent of the design intent. Conceptual designs created with Pro/DESKTOP are then passed to Pro/ENGINEER®. Pro/ENGINEER is the de facto standard for mechanical design automation and is based on PTC's parametric, feature-based, fully associative architecture.

By meeting the Windows 2000 certification standard, PTC has enhanced Pro/DESKTOP in a number of ways that directly benefit both the IT organization and end users. For example, the Windows 2000 Installer provides a robust self-repairing installation process, "enabling Pro/DESKTOP applications to be more reliably installed on workstations, PCs, and notebooks that already have many other previously installed applications," notes Starr. This ensures that IT will be able to deploy the application easily and efficiently on dozens, even hun-

dreds, of desktops, allowing the organization to collect direct input from more people during product development.

BOOSTING PRODUCTIVITY

Specifically, the new Windows 2000 installation requirements specify how applications must treat shared software components, such as Dynamic Link Libraries (DLL). Since Pro/DESKTOP meets the new installation requirements, IT managers are assured that installing Pro/DESKTOP will not create problems with previously installed software, Starr adds.

Similarly, the Multiple Monitor support in Windows 2000 also provides needed support for new hardware, enabling engineers to more easily visualize large complex designs in Pro/DESKTOP. This will increase designer productivity, ultimately boosting the organization's return on its investment in Pro/DESKTOP.

Finally, Windows 2000 improvements to power management and plug-n-play "promise to make mobile platforms more practical for both Pro/DESKTOP and Pro/ENGINEER," Starr continues. Engineers and designers will no longer be restricted to working at their desktops, but will be able to run their design tools on a laptop anywhere, making them more productive.

The easy installation and enhanced mobility achieved through Windows 2000 certification create that many more opportunities to extend the design process to more people in more places. For Pro/DESKTOP 2000 users, Windows 2000 certification means easier deployment, greater manageability, and higher productivity. *

Alan Radding is a technology writer based in Newton, Mass.

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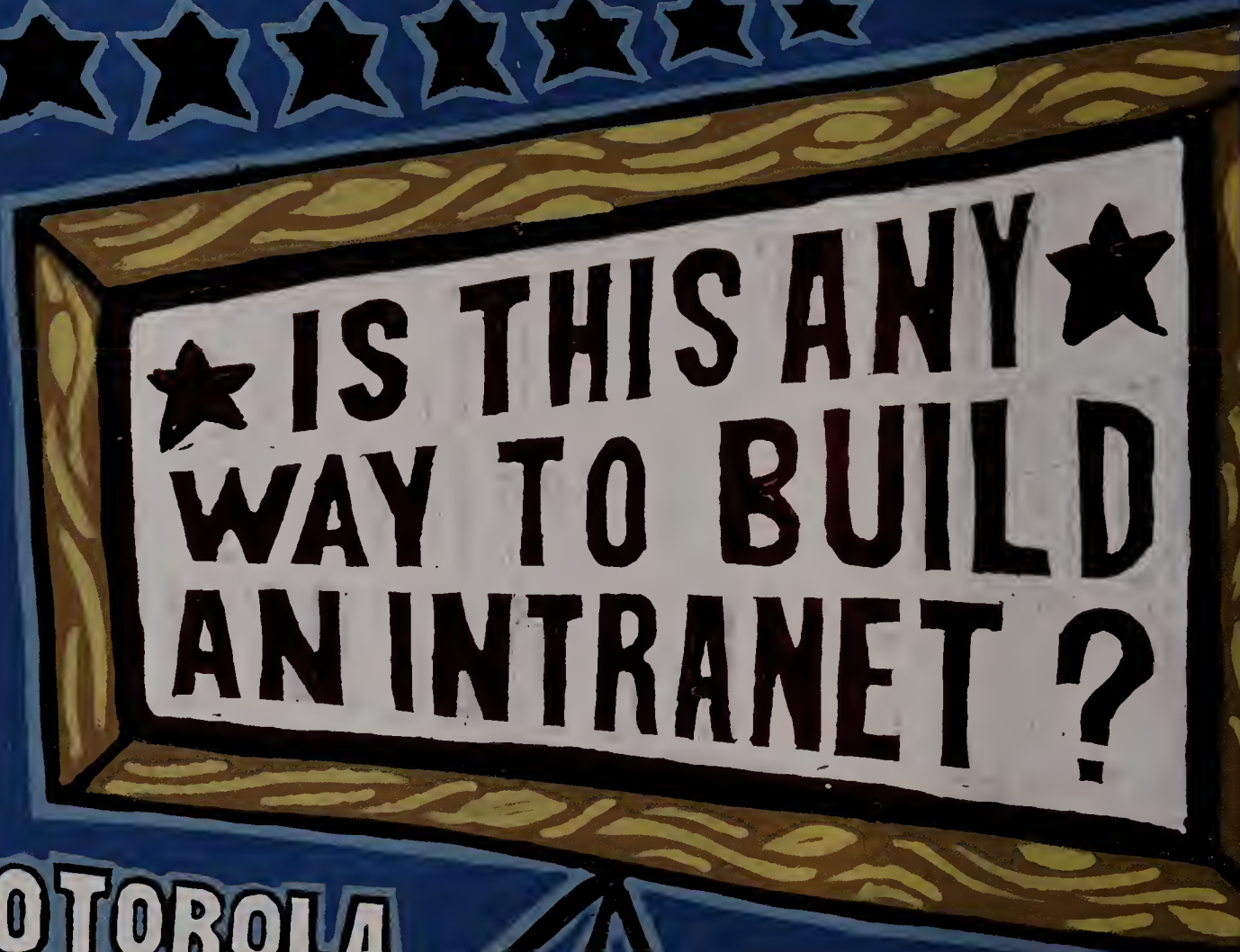
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★ FOR 130,000 PEOPLE
★ IN 50 COUNTRIES IN
★ HALF THAT TIME



By
Emelie
Rutherford







Lifting his eyes from his laptop to grab the last slice of Chicago-style pizza, Matt Beveridge caught a glimpse of the clock. It was midnight, Wednesday, Oct. 20, 1999. Beveridge had been grinding since 8 a.m., and the high-spirited manager of Motorola's E-Strategy was ready to go another eight hours. After all, he thought, how many times in his life would he get to try something as radical as this: Gathering 58 people from various offices and keeping them holed up for four marathon days and three nights in an effort to build a brand-new intranet.

And not just any intranet. The intranet that the Schaumburg, Ill.-based Motorola had in mind would be a portal that would connect 130,000 people in more than 50 countries and provide them with everything—facts about their dental coverage, travel planning tools, new product information, local news and weather, the inside dope on their heavy-hitting customers. This intranet, in short, was a monster.

Beveridge washed down his pizza with a sip of Sam Adams beer and surveyed the room. Three twentysomething web developers keyed in code around the table they shared, tapping their toes to Eric Clapton's guitar riffs. Hired help from Microsoft

and Epicentric, the San Francisco-based company that had built the intranet's out-of-the-box back end, stood by, ready to offer advice the moment it was needed. Beveridge was optimistic. With all the talent and effort going into this, it just might work.

Not everyone in the room was so sure. Greg Goluska, Motorola's VP and director of customer support systems, anxiously searched for signs of progress. He turned to Beveridge for reassurance, and Beveridge reported that things were moving along nicely. Both men knew that this night's session, their second of the four-day workshop, would be the busiest. And the toughest. The intranet has a module design, Beveridge told

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Goluska, which meant that everyone's work on the site's six sections wouldn't really come together until the very last minute, when those engineers and communication experts handed Beveridge the paper templates they had filled with content ideas. Beveridge and his crew would stay late, weaving the work of the others into Epicentric's portal. Tonight was crucial because the day crew had to review the entire site Thursday morning and suggest final adjustments before presenting it Friday to Pat

wanted to host it on their own servers and have the ability to change content at will. That is, they wanted to own it. To do that, they turned to Epicentric.

After playing with Epicentric's web portal product for a while, Goluska discovered how easy it would be to publish with it. He got the itch to force a quick development.

"I realized that using the technology wasn't rocket science or earth-shattering," Goluska says. "We didn't want to make tech-

nology the arguing point, which usually happens at Motorola," explains Beveridge. "By using this portal product, we were able to focus on the business and process-delivering needs. We pretty much knew what we wanted to do with the portal." All they needed was the meat to go in the pages.

As his committee conducted their weekly meetings about the "official" companywide intranet, Goluska kept hearing about vertical intranets that were sprouting up all over Motorola, reinforcing the autonomous, self-reliant nature of their publishers. And Goluska was supposed to be helping employees work together, across boundaries.

Goluska, who prides himself on running things his own way, decided to force the portal's development by getting a lot of people together to do it. Knowing he couldn't take Motorolans away from their duties or keep them focused on the project for even a week, he planned the group development process around four tightly scheduled days, divided by narrowly defined sessions. "I've been involved in initiatives before where we'll meet one day to plan what we'll talk about the next two," says Goluska. Why bother now, he thought, since we have the tools to publish.

While Beveridge worked with Epicentric and configured a straw portal, the rest of the intranet committee started brainstorming on content. They began their conceptualizing (as Motorolans often did) by talking with the big management consultancy groups. But KPMG, Ernst & Young and PricewaterhouseCoopers all recommended a path Goluska was unwilling to take. They advocated building a consensus and defining a vision, which Goluska figured would take a month, if not years, of meetings. So the intranet committee blew off the advice. The fateful decision was made. They would build their intranet their way and they would build it fast. They'd concentrate resources, grind and crunch. They'd do it in four days and three nights.

Most Motorola engineers and communications experts had never forced the development of anything.

Canavan, Motorola's senior VP and director of global leadership and organizational development. Canavan, the corporate sponsor who had promised to bring the intranet before the operating committee for funding, was the key to the project's continuation and the intranet's implementation.

Whose Bright Idea Was This?

Planning for Motorola's intranet had really begun four months earlier, in June 1999, when upper management decided that it wanted to use an intranet to help employees simplify tasks like changing offices. Goluska, who also wanted to foster collaboration on customer-driven services, formed a small committee to plan the site.

His group of customer-focused Motorolans included Beveridge, the technology point person, and Susan Marie Ballun, Motorola's manager of customer support systems, the project's logistical manager.

The intranet committee immediately realized that their biggest challenge would be creating the content for the site, but first they needed to deal with the technology. After meeting with several ASP portal vendors, Beveridge decided that they

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Ready, Set...

Step one, they agreed, was to figure out what information would help employees of a huge, segmented company do their jobs better. They decided that what the intranet had to contain included leadership messages, information on business unit initiatives and structure, profiles of Motorola's customers, tools that allow employees to execute cross-departmental tasks like planning trips or changing offices, an area for employees to swap project ideas and access to Motorola's 35-plus vertical intranets.

The intranet committee now had to gather Motorolans to create and structure the information. Ballun called the Illinois Institute of Technology (IIT), a technical college within an hour's drive of Motorola's headquarters, and arranged to use one of its downtown Chicago classrooms in mid-October. She then began contacting Motorolans around the world, inviting people to represent their business and geographical interests in a hands-on, results-oriented workshop. The committee deliberately steered clear of IT-inclined people, inviting instead those who, as Ballun says, "own content, collect content and disseminate content." Within a few weeks, she had assembled a group of 48 staffers with titles such as manager of employee communication, data librarian, internetologist, director of strategic employee communication, director of knowledge management and corporate enterprise messaging specialist.

In an effort to encourage these contributors to focus on specific topics rather than the site's overall rationale, the intranet committee took it upon themselves to determine the structure of the site. They divided the site into sections that they would later name Home, Business Info, Customer Edge, Internal Services, Knowledge Café and My Stuff. They divided the group

into eight teams, one for logistical issues, one to tweak Epicentric's portal and six to plan the content for each of the site's six sections. Though each team's leader began attending the intranet committee's meetings, most workshop attendees did not learn about the project's specific goals until they arrived in Chicago for the beginning of the workshop. When they did, many doubted they could pull it off. Most Motorola engineers and communication experts had never forced the development of anything, and their 72-year-old company was known more for process and QA than for speed to market.

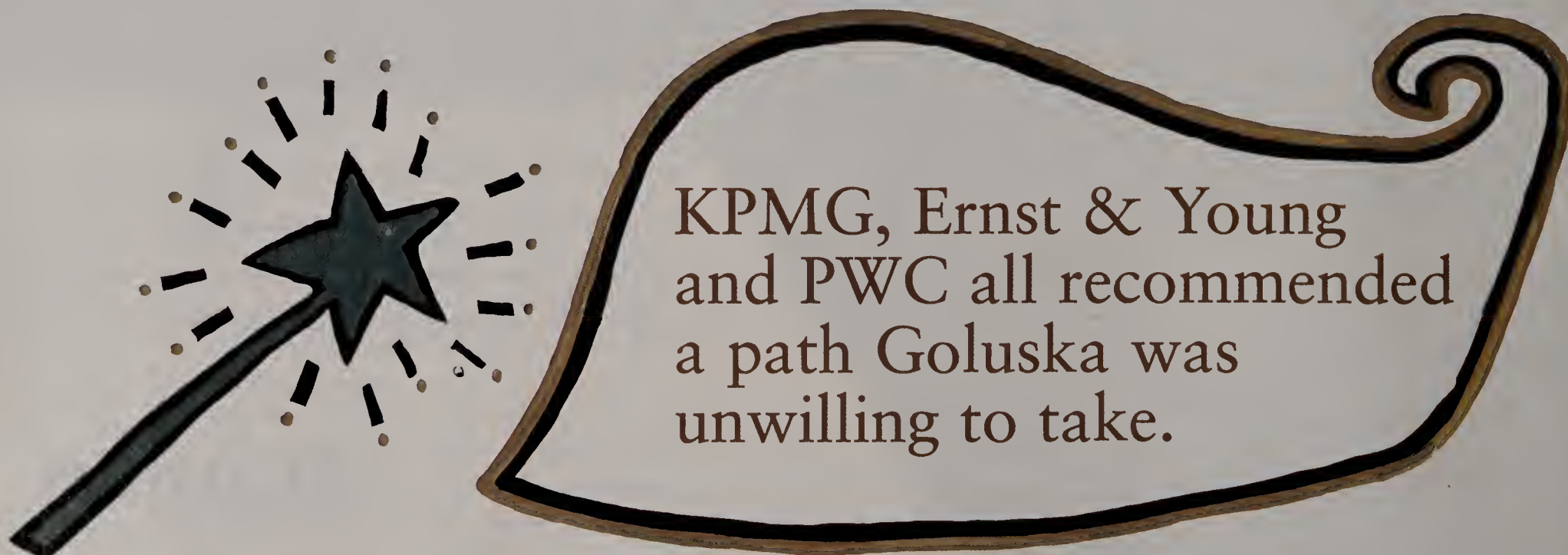
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On the chilly Tuesday morning when the workshop began, Vesna Arsic, Motorola's new director of corporate marketing strategy, found herself in a room full of white boards, projection screens, configurable group production stations and 57 total strangers.

"I was pretty pessimistic when I saw what we had to do," say Arsic. "I thought, Oh no, all these people, how are we going to get consensus on anything?"

As workshop attendees were assigned teams, Arsic found herself on the Customer Edge section, which was intended to provide information about Motorola's customers.

It was a section that had not been on the intranet committee's planned list, and there were precious few ideas about what exactly Customer Edge might contain. Arsic sat through a morning of icebreakers, a straw portal review and a benchmarking session wondering how she and her seven Customer Edge teammates would tackle the task of creating content that was meaningful for Motorola's far-flung employees. Goluska told all content collaborators to limit their scope and try to



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think of the intranet as a *USA Today* for Motorolans. This intranet, he told them, would be a tool for over 130,000 employees in more than 50 countries working on an inestimable number of projects. "We don't want to build a detailed collaborative site for specific topics," Goluska said. "We have to figure out how to bring everybody up to speed, to give a general view of Motorola."

Arsic's team knew that there was no way they could present information on all of Motorola's customers, a group that Arsic estimates includes every Global 1000 business. So they decided to provide only high-level information on those cus-

tomers that generated the most revenue. Within the Customer Edge section users would find a customer's (for example, General Electric) location, a general profile, its sales and product lines, its relationship with Motorola and the history of this relationship. They were making progress, but slowly.

Art Jessen's Business Info section team had a different purpose: To keep people posted about new business deals, new products and the structure of the company—information that was sometimes hard to find. The first thing Jessen, Motorola's senior manager of global internet strategy, learned was that it would be difficult to present truly useful information on each

It's the User, Stupid

Jakob Nielsen warns about designing portals for the business units rather than employees

Is a 58-person, four-day workshop the best approach to building an intranet? Web usability guru Jakob Nielsen warns design by committee is rarely the best approach. A former user interface engineer for Sun Microsystems' intranet, Nielsen now advises companies on their web initiatives as cofounder and principal in the Nielsen Norman Group. Nielsen talked to *CIO* about intranet development teams that truly represent the employee and produce a product that improves their productivity.

CIO: How should companies begin conceptualizing and planning their intranet?

JN: Companies need to realize that they're designing for the users and not for the various departments. They need to learn about the day in the life of an average employee. There's probably several types of employees—those at headquarters, in branch offices, out in the field. They need to pinpoint these employees' true needs.

How do they identify these?

I would recommend a study where you identify the main types of users, and you really shadow them for a day or two to see what they do, see what their information

needs are, see how they go about their job. You will identify unmet needs, ways in which people do awkward, clumsy things working around problems with the system.

You need to know how the employees think about the different services that are offered, and what they think are related services. Get a hold of 20 employees from different divisions and put them through card-sorting exercises, where they're given lists of services and asked to put cards together in piles [according to which services] they think are similar.

Are these employees, managers or end users?

It has to be the end users because the managers know only how things are supposed to be done, not how they're actually done. Most internal systems are going to be used by the people on the floor, so to speak, most of the time. Therefore, they are the ones you want to test. They're the ones you want to interview and follow around for a day, whatever methodologies you use.

What type of development team would best translate these results into content?

Small teams work well, with experts on web design and employee communication and

web technology. These small teams make decisions according to their studies of average employees' jobs and their information needs. You should not assume that an uninformed group of managers knows what information people out in the field actually need from their department.

How should an intranet development team divide its tasks?

I would want to have a group that focuses on, let's say, the German office. Another group focuses on the staff at headquarters. Yet another group focuses on the needs of the traveling salesperson. The site and development team should be grounded in the human reality, not in the system reality.

So intranets should be more focused on employee types rather than on the types of action that all employees execute?

Exactly. And on the tasks of the jobs these people have. It's not just their jobs in terms of formal job description but what they actually do in a day. This includes viewing their benefits or checking out the menu in the corporate cafeteria. Yes, there are a variety of things that people do, but you need to look at the people's roles. —E. Rutherford



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sector without aggregating an enormous amount of detail. Motorola, after all, had three main business units—the Semiconductor Products Sector, Integrated Electronic Systems Sector and Communications Enterprise—and each had scads of functional and regional divisions.

“We struggled with wanting to do so much,” says Jessen. “We kept going back to the *USA Today* metaphor because many people wanted to see certain things for their operations. Many times these conversations got deeper and deeper down narrow paths.”

During Wednesday’s breakout team meeting, for example, Jessen’s team decided to include organizational charts in the Business Info section. They talked about providing five or six levels of organizational charts within each business unit. But with so many divisions and regionally divided offices, no one knew how they fit in the hierarchical food chain.

“The challenge,” says Jessen, “was to bring it back to the surface.”

While discussing how nice it would be to be able to see what your relation really was to that stranger who just sent you an authoritative-sounding e-mail, Jessen’s group realized that collecting and creating hundreds of charts was not within their scope, or even in the company’s interest. So the group talked about presenting charts with only the president of each sector and that person’s direct report. When team members began to conceptualize this scaled-down model, they became concerned that their employees needed to know several layers of reports. Jessen and his teammates thus began to learn a hard lesson: They would have to distance themselves from ideal practices and do only that which was possible.

A few classrooms away, the Knowledge Café team was also learning some hard lessons.

“We had the hardest group,” says Phil Stockwell, manager of Compass, Motorola’s subscription-based Yahoo-type portal.

“The subject we covered was the whole reason we were all there—to foster collaborative environments.”

But the collaborative environment in which they were working was less than fruitful. The group, consisting primarily of knowledge management specialists, was unable to agree on the content of Knowledge Café. And when these theorists disagreed, they brought the discussion back to the fundamentals of knowledge management and abandoned the task at hand.

At the heart of their inability to collaborate was the fact that they had no material to work with. Knowledge Café, they decided, would foster collaborate communities of practice. But Motorola had never identified any such communities of practice, and compiling needed information, the group feared, could take a year or more. In the end, Stockwell’s team produced only recommendations for what the Knowledge Café should do. Beveridge was forced to fill in the section with presentation-level text.

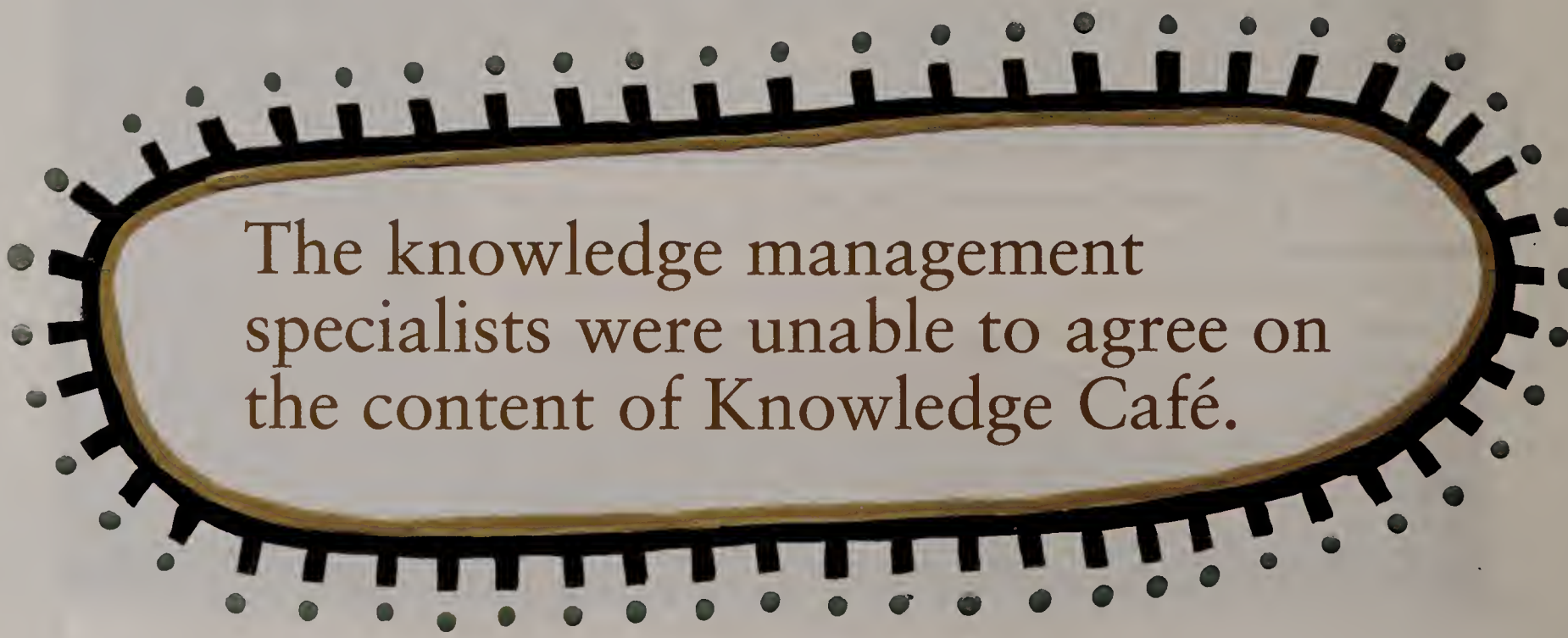
Intranet in Limbo

W

hen Goluska, Arsic, Jessen and Stockwell returned to IIT Thursday morning, Beveridge and his team presented the fruits of their long night. Motivated by Goluska’s all too apparent doubt, Beveridge had worked on the portal until three in the morning,

posting real content in 80 percent of the intranet. The other 20 percent included mocked-up content, like that presented in the Knowledge Café section.

The final product was a portal full of text links, topped with a blue banner revealing the intranet’s new name, RightHere.mot.com, and folderlike tabs leading to each team’s subsection. These two- and three-column pages were filled with



The knowledge management specialists were unable to agree on the content of Knowledge Café.

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The final product owed more to a series of executive decisions than to teamwork.

myriad links to existing vertical intranets, personnel services, database profiles of customers and products, and short teasers to sector messages and reports.

The front page's links to press releases and upper management messages were balanced with a customizable interactive calendar. Jessen's Business Info section contained two columns: one with office-specific messages and one with pull-down menus connecting users to other sector-specific intranets. Arsic's basic Customer Edge section offered links to industry and financial news articles in one column, with links to customer profiles on the right. The Knowledge Café tab revealed what Stockwell's team thought could one day be developed: chat rooms and forums for groups to use when working on projects and links to future libraries of information and project sites. The team that worked on the Internal Services section varied the layout and created three columns in which categories like Order Now and Keep Me Informed and the much-anticipated I'm Moving reside. The tab on the far right, My Stuff, which was to be modified by all employees, contained sample content—NFL scores, driving maps and weather links.

The final product, Beveridge admitted, owed more to a series of executive decisions (his) than to teamwork. As the project came down to the wire, Beveridge posted the content he thought was most appropriate, leaving the stuff that didn't fit on the cutting-room floor. Predictably, his decisions did not please everyone.

"There was a heated discussion in which we debated having a consistent column with personalized stuff in it that followed you around the portal," says Beveridge. "I had to just make an executive decision to not implement that." So while teams were allowed to add banners to the top and columns on the side of their page, those who requested more advanced features, like the Business Info's request for scrollable sections of the site, were denied.

Similarly, some team members had content requests that did not fit into the intranet committee's predetermined scheme and were simply ignored. Goluska himself had set up an idea board where anyone could make suggestions. "Some of these ideas were amazing," says Stockwell, "but when we wrapped up the session, the idea fruit was ignored."

All's Well That Ends Well?

Despite such criticism, RightHere.mot.com was generally well received. "It was amazing," says Jessen. "I was a little like a kid at Christmas, actually seeing the work we had done." As attendees patted themselves on the backs and began to forget their frustrations with their group experiences, a new concern arose—RightHere.mot.com's future.

"We started to ask why we had to sell it," says Stockwell. "We were pleased with the site. So why did we have to convince others? It should've sold itself."

In fact, the site hasn't sold itself. And although Pat Canavan reportedly loved what he saw, and loved the new intranet, three months after the project he still hadn't shown it to upper management and he declines to say why.

All the workshop attendees are back in their respective longitudes and mind-sets. Motorola spokespeople say they aren't exactly sure what will become of the fruits of the four-day effort. But Greg Goluska insists that the plan is moving forward, although not quite as quickly as many who worked on it would like it to.

Still, for four days and three nights, it was a helluva ride. **CIO**

Have an intranet development story you'd like to share? Write to Web Writer Emelie Rutherford at erutherford@cio.com.

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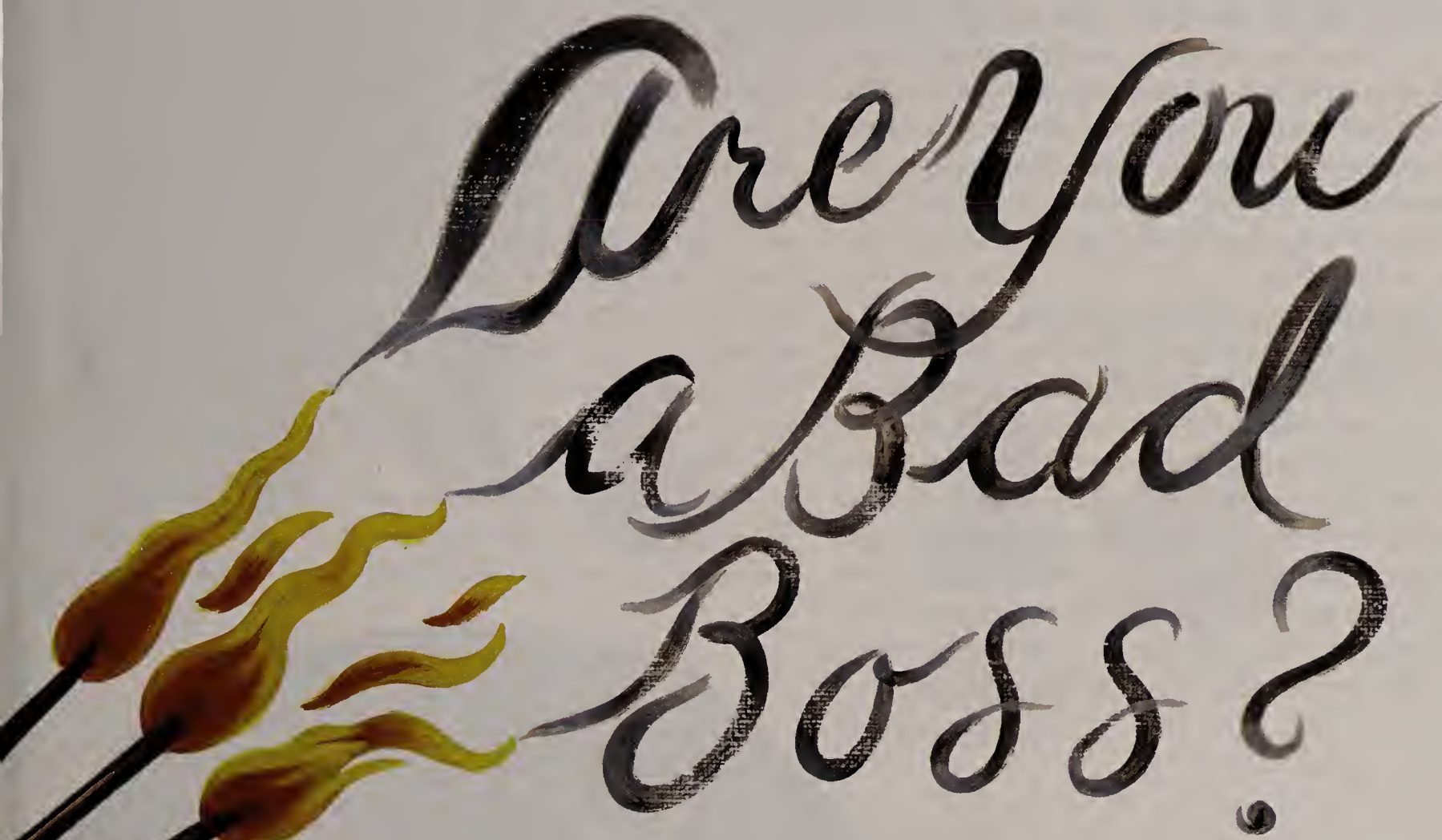
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*Your best people are flying out the door left and right.
Blame it on that internet startup down the street,
but maybe you're the problem.*

BY POLLY SCHNEIDER

Not long ago, a thriving young manager we'll call Paul was happily ensconced in the IT department of a large manufacturing company. Paul loved his work, found his team members stimulating and had a great boss. One day Paul went to his boss, an IT director, asking for help. Paul was in the middle of a heated conflict with a coworker and hoped his boss could intervene in some way. Paul was so distressed about the problem, he wondered out loud whether he should look for work elsewhere. The boss scratched his head and came up with what he thought was a supportive answer. "Paul, you do what you feel is best for you." *Wrong answer, boss.*

What was best for Paul was not best for his boss or the company. A few weeks later, Paul got a call from a headhunter and for the first time in the five years he'd worked at the company, returned it. Soon after, Paul left for a lucrative job at Cisco Systems. Sharon Jordan-Evans, a retention expert and executive coach in Woodland Hills, Calif., who promised Paul confidentiality, says the boss never figured out what he did wrong. The case is a chilling revelation for CIOs and IT managers today: You don't have to be the Boss from Hell to lose good people. All it takes is one critical mistake. What Paul's boss should have said is, "Don't even think about going," and then arranged a meeting with the coworker to discuss the problem.

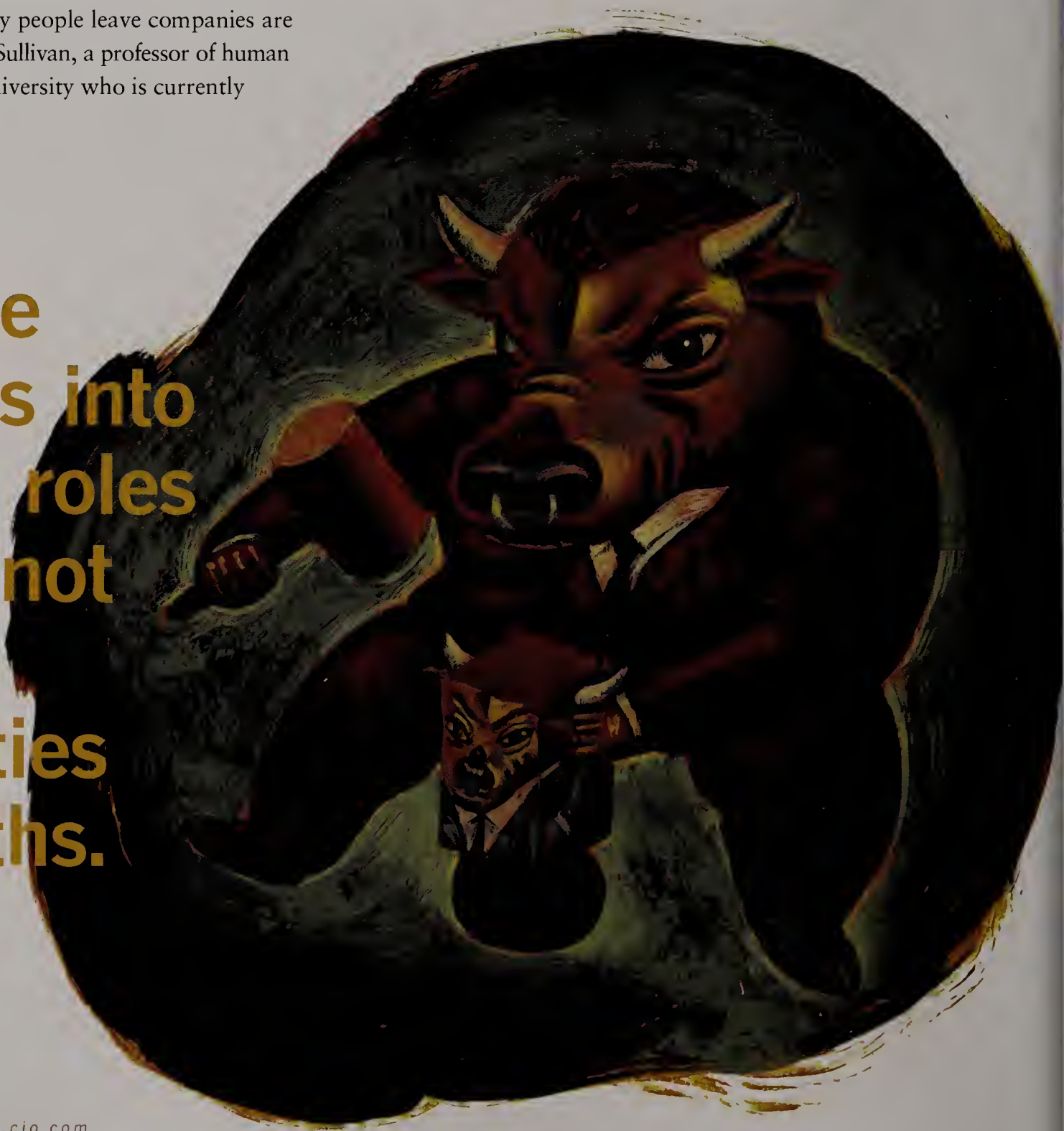
Most people have had a lousy boss at some point in their career, and Paul's case is a relatively mild example. Think you have a retention problem at your company? (Who doesn't in this industry?) Throw away the HR manuals and take a good hard look at yourself and your management team. You and the managers who work for you—not the hot job market—might very well be the number-one cause of attrition in your organization. Retention studies show that 70 to 80 percent of the reasons why people leave companies are related to bosses, according to John Sullivan, a professor of human resources at San Francisco State University who is currently

working for Agilent Technologies as chief talent officer. Sullivan, author of the e-book *The Manager's Retention Toolkit* (revised May 1999), consults high-tech companies on retention and says money is not one of the top reasons people switch jobs in the industry. "People either say my boss was a jerk, or I wasn't challenged," he says.

Brand-name companies can recruit an outstanding employee with a generous benefits package and a good reputation, but keeping her is another matter, according to Marcus Buckingham and Curt Coffman, authors of *First, Break All the Rules* (1999), which chronicles a multiyear research project by The Gallup Organization. "It is her relationship with her immediate manager that will determine how long she stays and how productive she is while she is there," they explain. Indeed, an IT department's retention rate is the most accurate indicator of the quality of a department's leadership. (See "Unfair Game," *CIO*, March 15, 2000.)

The problem exists in every industry but may be particularly troublesome in IT organizations. Even though business types are now increasingly promoted into senior IT spots, historically managers have

Don't force employees into particular roles that may not suit their personalities or strengths.



When Asked, "Do You Really Know What IT Assets You Have?"

These guys got creative



I used
to know
who had
what,
really
I did.



I'm
pretty
sure
I can
find out,
I think.



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to you
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been culled from the technical ranks. People skills are (surprise!) not always their forte. (For advice on coaching new managers, see "Coaching: What Managers Need," Page 154.)

The management and retention equation is complicated by the current IT staffing crunch. "I think the real issue may be that we're in a hot industry where employees have options and don't have to put up with poor working circumstances," says Rory LaGrotta, a senior IT executive at a major northern California company. But paying close attention to management skills behooves any executive in a competitive market.

Discussing bad bosses is an exercise in hair-pulling. No one wants to think of herself as a weak boss—and no one wants to talk about peers. At some level, it's a dirty little secret. San Francisco State's Sullivan believes senior managers tend to protect each other from censure, even if one is known as a bad apple. Executives fear the finger-pointing will eventually backfire. "There is no tradition in American management to fire bad bosses," he notes. In IT the problem may be concealed further because of sky-high turnover rates. The pressure to reduce attrition in the face of rising workloads may cause CIOs to skirt the issue of problem managers—inadvertently or otherwise. Marc D. Lewis, managing director of the technology and venture practice at Cleveland-based executive recruitment firm Christian & Timbers, concurs. "Anything that creates even greater turnover is a real problem—and may well be swept under the rug."

Although most people agree on what makes a bad boss, the definition of a good boss is highly subjective. Still, as an IT manager, you can and should take stock to see if improving your own skills can create a better environment and higher retention. To evaluate yourself as a supervisor, consider the following questions:

Do you really know what makes your employees happy?

Managers and companies often get stuck in the endless cycle of revamping benefits and on-the-job perks as a means to keep the restless talent satiated. They institute onsite dry cleaners, pizza Fridays, ropes classes for team bonding, bigger bonuses—all of which may be valuable but fundamentally miss the mark. The most important thing a manager can do is talk to his employees on a regular basis, asking what they want and what issues might cause them to leave, says Jordan-Evans, whose organizational development consulting firm, the Jordan Evans Group, has coached teams and executives at major corporations in North America and Europe, including GTE, Universal Studios and AT&T. She recalls a client in a high-tech company whose direct report, a manager, hinted when asked how things were going that he might leave because he wasn't learning anything new. His boss found him a mentor, sent him to training and then offered to take him to a senior staff meeting. The result? The manager stayed with the company. "Had the manager's boss not asked, he would have never learned," Jordan-Evans says.

Keeping employees happy also requires giving them meaningful rewards. Managers frequently make the mistake of doling out group rewards that fall flat for the individual. One employee may love that dinner-for-two certificate, while another would rather have a massage and yet another may opt for a day off. Jim Harris, a strategic retention consultant based in Pensacola, Fla., winces as he recalls a Fortune 25 client who thought putting a clown in the lobby would help motivate the IT department during a high-stakes project. "The managers thought it was a brilliant idea, but the employees hated it,"

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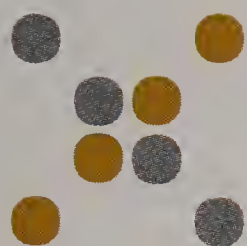


he recalls. Harris, whose company NetSpeedConsulting works frequently with high-tech companies and IT departments, recommends learning something personal about each employee and starting a file for reward ideas. Or, he suggests, at the start of a project, ask every team member to write on an index card what they'd like to receive if they meet the project goals.

Needless to say, there are times when group events do wonders to boost team morale and blow off steam. Just ask Jim Foster, executive vice president of product strategy and technology for Reston, Va.-based Best Software, a developer of human resources and financial software. After a project team reached a major milestone, Foster hired a limo to pick up the 25 team members and take them out for a night on the town with him and other company execs. "They partied all night, and we did too," he says.

Do you cringe at the mention of soft skills?

Don't: They really do matter. While many managers pay lip service to this HR mantra, CIOs like John Lochow swear it was his drive to be a savvy communicator that allowed him to climb the corporate ladder. Now executive vice president of worldwide systems and logistics for hardware and software distributor Tech



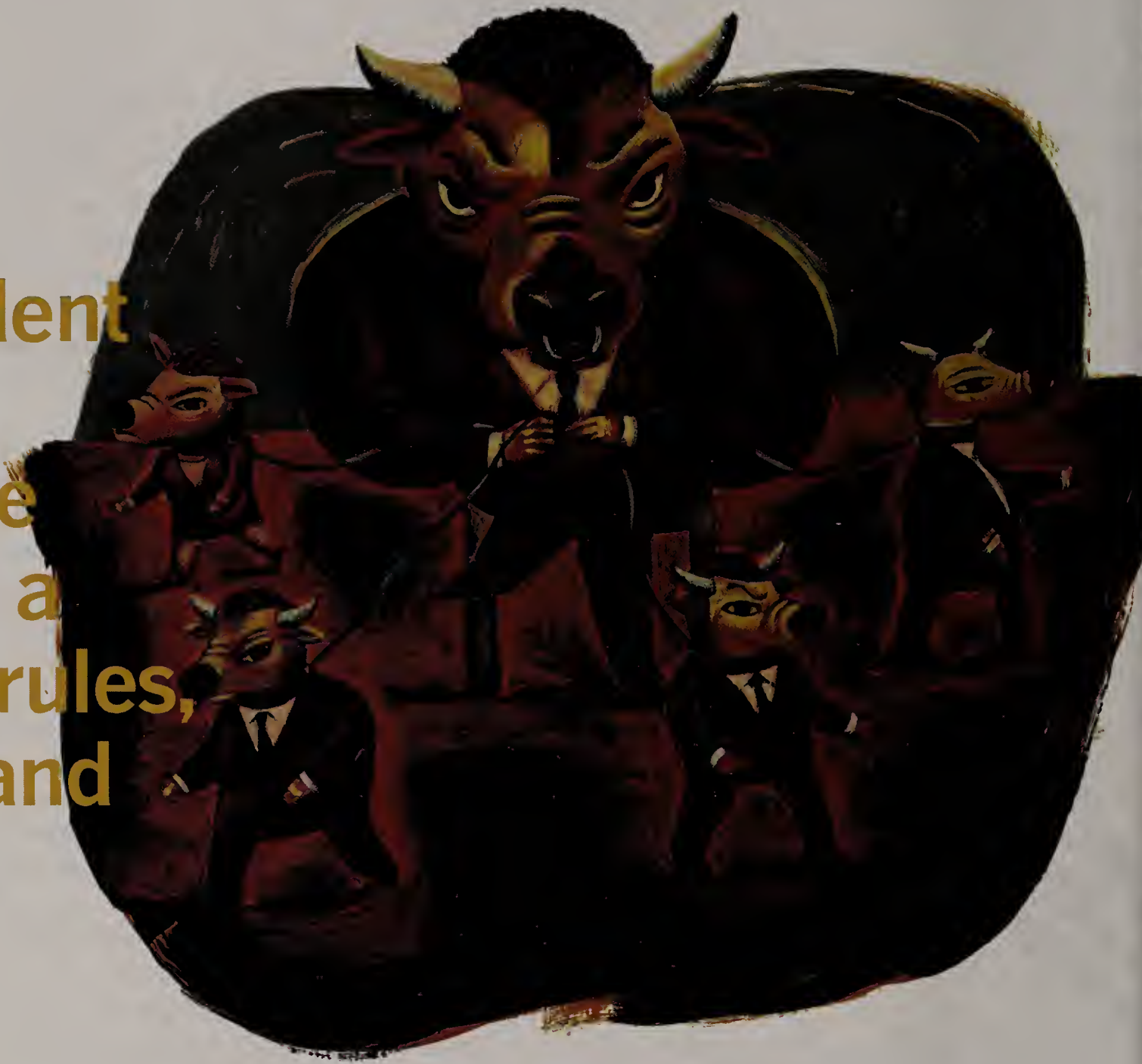
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Today's independent workers don't take kindly to a litany of rules, policies and controls.



Data Corp. in Clearwater, Fla., Lochow wasn't always so keen on right-brain attributes. Fifteen years ago he looked for just two things when promoting employees to management posts: technical know-how and business problem-solving prowess. "Today I look at their people skills—can they talk or write well?" says Lochow, who has worked in senior executive and CIO roles at large companies including AT&T and Bell Canada. But it goes deeper than that. Managers have to show that they genuinely care about helping others, he says. "If you don't and are merely playing a role, it will come out in the wash." Good managers, in his view, analyze every decision from the "human nature perspective" first.

Do you give your team enough freedom to work?

Although building relationships with direct reports is crucial, if a manager is too involved in the employees' business, they'll run for the exit door. LaGrotta says her ideal boss is someone who points her in the right direction and then "gets out of my way and lets me do my job." Today's independent workers don't take kindly to a litany of rules, policies and controls. Ironically, those same anti-establishment

programmers and project managers are evaluated by their ability to "micromanage" code and budgets, so many of them carry these traits into their people management roles. CIOs must watch for this behavior among their new managers—and honestly confront their own micromanagement tendencies.

Tom Holahan, an IT consultant in Washington state, tells the story of a nightmare boss he had 10 years ago. "Jack," who held the number-two IT spot at a major software company, was a new hire from AT&T and apparently believed gaining respect could best be accomplished by keeping a tight leash on his employees. Jack required Holahan and 16 of his coworkers in tech support to wear walkie-talkies so he could reach them at any second of the day. "We would be working with a software engineer on a critical problem and would have to drop everything and go help fix Jack's boss's e-mail," Holahan recalls.

Holahan says the practice went on for years—to the chagrin of his internal customers who were often interrupted by Jack's screaming voice. He complained to the corporate HR department about this and other instances of Jack's controlling behavior but says he got no results. Finally, after progressing through two management positions, Holahan decided five years under Jack

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CIO's Top 10 Clues That You May Be a Bad Boss

10 You get a bigger kick out of fixing your broken Palm computer than asking an employee how he's enjoying his work.

9 When an interview candidate asks you how you deal with conflict on your staff, you find yourself gabbing about a great movie you saw last night.

8 In your book, giving people freedom on the job means getting rid of the sign-in sheet.

7 After your employees put in 80-hour weeks for two months to meet a critical deadline, you reward them with pizza and movie passes.

6 When it comes time for performance reviews, you give mostly negative feedback because you know that's the only way people will improve.

5 When one of your best workers tells you she can't get a business sponsor on her project to return her phone and e-mail messages, you tell her that patience is a virtue and to keep trying.

4 An employee survey reveals a need for mentors for your junior staff. You send them to a networking event at a local trade association.

3 You believe employees hate sitting through department meetings to hear about what's going on in the company. Those who are interested will come ask you.

2 In your opinion, your job is to mold good employees into the job descriptions that best suit your organization's needs, rather than to capitalize on their skills.

1 You organize a chauffeured night on the town for your top performers, hosted by yours truly and the management team. No one shows up.

—P. Schneider

was enough and left. Strapped with a mortgage and with a family to support, he admits the company's "velvet sweatshop" culture of great pay and stock options made it tough to leave any sooner.

Yet micromanagers often operate in more subtle ways. Early in his career at DHL, John Keast, former CIO at online catalog company Branders.com, was given the task of renegotiating a vendor contract. During the discussions, Keast butted heads with the vendor on an issue that was delaying completion of the deal and causing Keast untold frustration. At one point, over a beer with one of the sales reps, he learned that the vendor had told Keast's supervisor, the CIO, that the issue was non-negotiable. Keast is still unsure why his boss would have concealed such an important piece of information. The incident caused Keast to start to lose confidence in his boss and ultimately contributed to his decision to leave DHL. "There's a group of managers who don't want their people to be successful so they withhold information," he says. Effective bosses give their employees the information they need to do their jobs well.

Sometimes, managers are perceived as controllers by their direct reports simply because they aren't comfortable with breaking the rules. This sort of flexibility—allowing employees to work at home one day a week, giving sabbaticals or catering to an employee's desire to telecommute from Hawaii so that he can pursue his surfing hobby—is often what it takes to keep good people.

Have you learned to mentor?

Being a mentor implies taking employees under your wing, investing significant chunks of time into their development, helping them build relationships with key allies in the company or industry—in effect, becoming an on-the-job parent. Most employees, however, simply want quick, regular feedback and support; in fact, that's what the Gen X and Gen Y workforce demands, Harris says. "Managers who get it understand that every time they interact with people it is a performance review," he says. It can be as simple as sending an e-mail of thanks to someone who puts in extra hours to meet a deadline. Too often, managers focus on the negatives without realizing that positive reinforcement is what drives employees to go the extra mile. Another mistake is trying to force employees into particular roles that may not suit their personalities or strengths; look for the golden nuggets in each employee and spend time developing those instead.

Encouraging risk-taking is another valuable mentoring task because it allows people to push the envelope without fear of penalties. Several years ago at Best Software, the attrition rate was above 20 percent. After creating new training programs and a more open culture, it's now in the single digits, Foster says. He



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encouraged managers to push a risk-friendly policy, which paid off a few years ago when developers pursued a web platform for the company's products—a then-risky venture that has turned into a highly profitable business today.

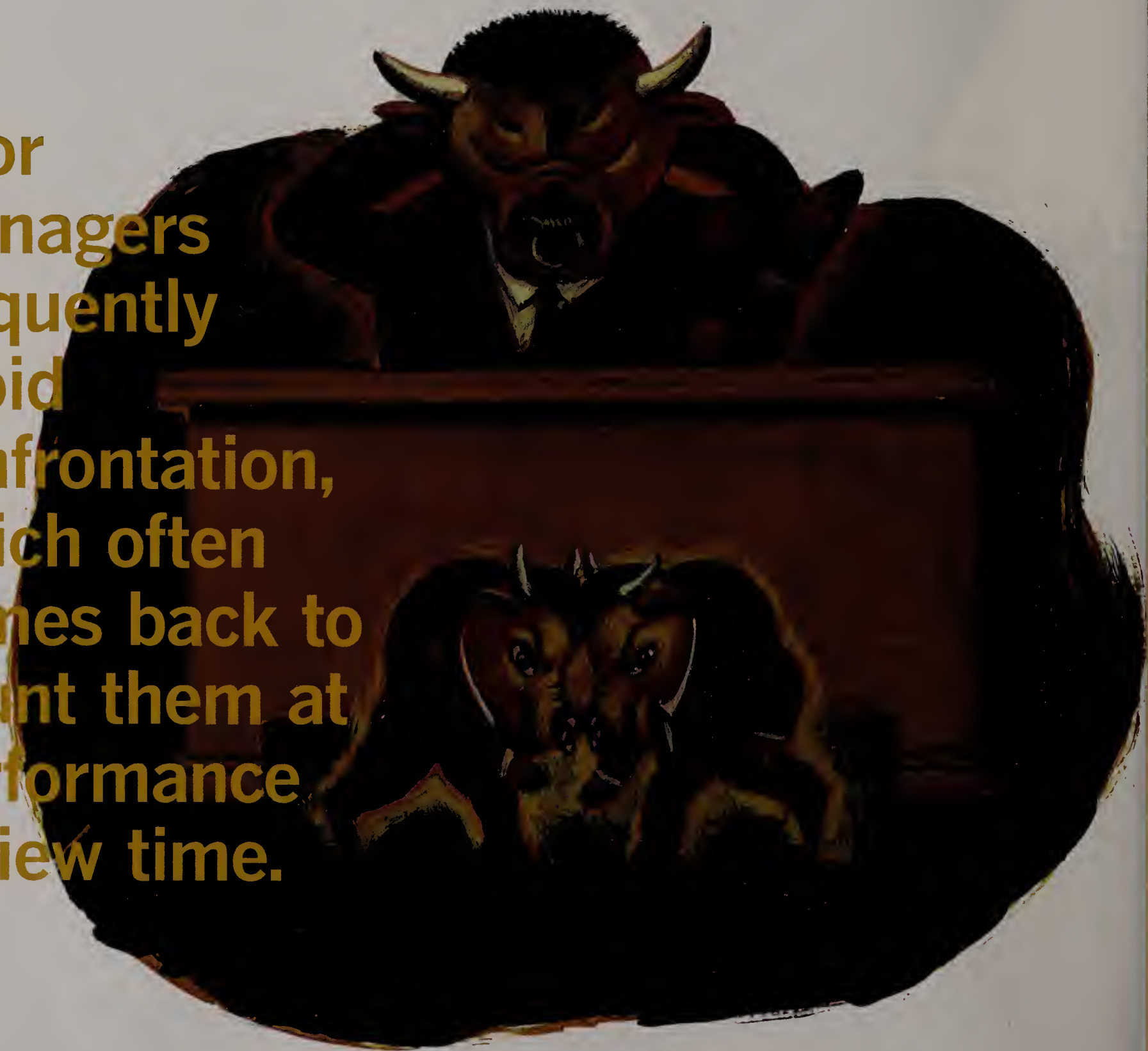
Above all, mentoring means always looking out for the employee's best interests—for instance, making sure higher-ups know about his good deeds. It can even mean helping him out the door if a better opportunity exists elsewhere. "We have seen examples of CIOs recommending someone good in their own organization to us when we are recruiting for another employer," Lewis remarks. While an extreme and perhaps controversial example, the message is clear. Being a good manager sometimes means putting an employee's interests above the company's—and that can drive loyalty among the rest of your staff.

Can you be tough?

No, being tough doesn't mean behaving like a military commander. It *does* mean being decisive and providing direction when necessary. One of the most coveted management skills today is the ability to make decisions quickly; effective managers accept the fact that they must often act on incomplete information. IT workers abhor bureaucracy, long meetings and anything else that slows them down.

Good managers also make sure employees don't lose sight of the big picture. Programmers tend to get distracted by the cool aspects of what they're creating, Foster says. They need and appreciate direction from those who understand the business drivers. He learned this lesson the hard way a few years ago during a development project at

**Poor
managers
frequently
avoid
confrontation,
which often
comes back to
haunt them at
performance
review time.**

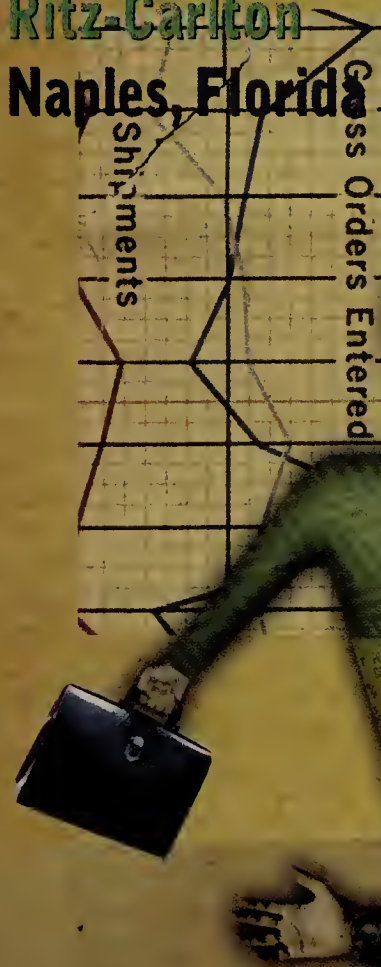




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■ A Machiavellian View

CONFERENCE OVERVIEW



TABLE OF CONTENTS

CONFERENCE OVERVIEW

Lynda Rosenthal and Gary Beach

NOW, HOW?

Ingenuity is the Key

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Detailed information about general sessions, business briefings, scheduled meals and activities throughout the conference.

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General Session presentations will be given by **Justin Yaros**, CIO of Twentieth Century Fox; **Tom Woteki**, CIO of the American Red Cross; **Michael Dillard**, CIO of ClubCorp, Inc.; and **Ann Delligatta**, COO of autobytel.com inc.

Our Wednesday keynote presenter, **John P. Kotter**, author of *John P. Kotter on What Leaders Really Do*, offers insight into power, influence, interdependence and change, and spells out how executives can become more effective leaders. **Stanley Bing**, author of *Lloyd: What Happened* and his most recent work, *What Would Machiavelli Do?*, has been described as "an anthropologist of corporate culture, a satirist of corporate greed, and a comedian of the libido." Featured presenter, **Rob Rodin**, former CEO and president of Marshall Industries, Inc. and author of *Free, Perfect, and Now: Connecting to the Three Insatiable Customer Demands: A CEO's True Story*, reveals how executives should prepare for and respond to the demands of today's customers — they want the product or service for FREE, they want it PERFECT, and they want it NOW.

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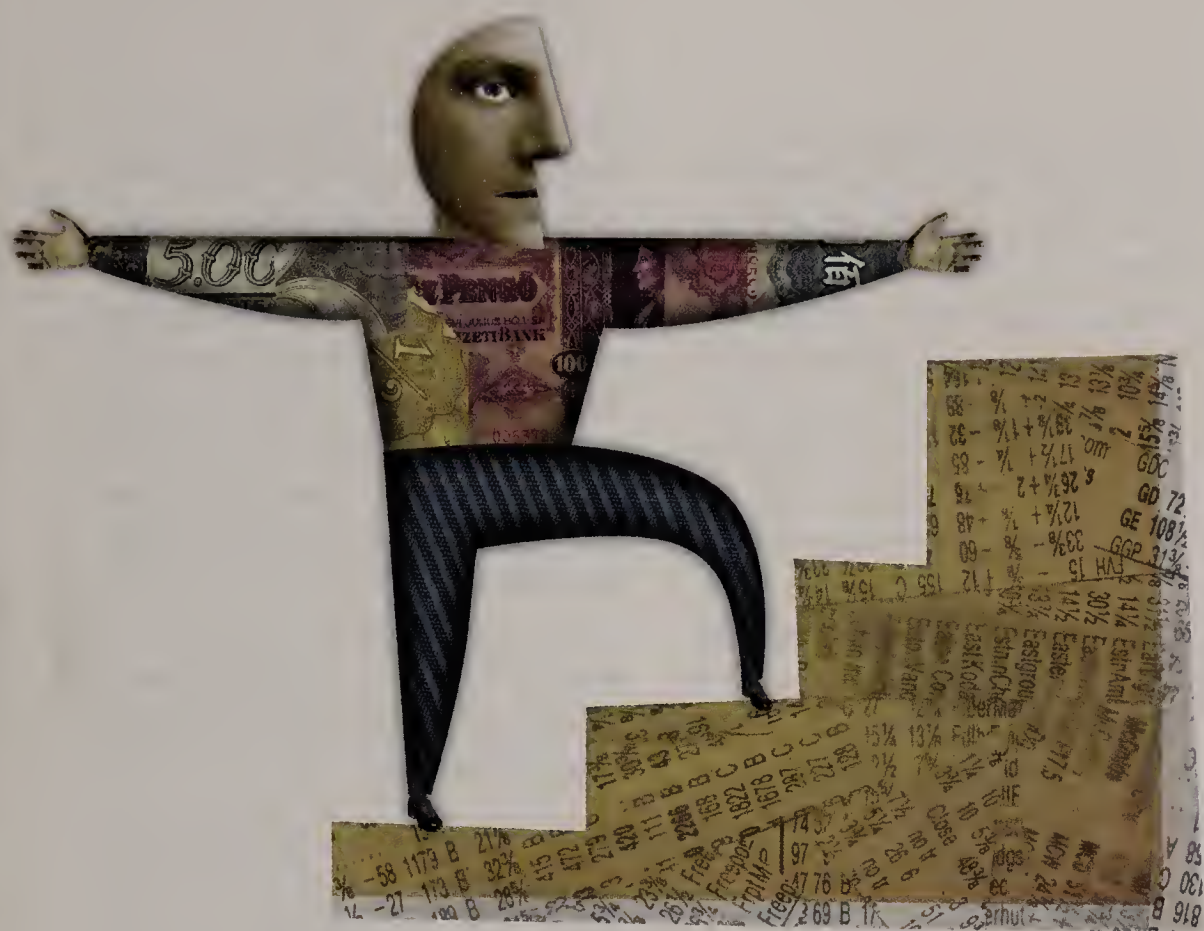
Regards,

A handwritten signature in dark ink that reads "Lynda Rosenthal".

Lynda Rosenthal
Executive Vice President and
General Manager, Executive Programs
CIO Communications, Inc.

A handwritten signature in dark ink that reads "Gary J. Beach".

Gary Beach
Publisher
CIO Magazine
CIO Communications, Inc.



Now, How?

Ingenuity is the Key

BY TOM FIELD

We're not talking new, we're talking now — the Now Economy, that is.

We're talking not about a time that's coming, but one that's here — a new age of business powered by the Internet and measured in terms of shortened cycles and speed of delivery.

We're talking about time-honored professions that have suddenly and permanently changed because of the new electronic medium; old businesses that have reinvented themselves; and new enterprises that have arisen with new business models that command instant electronic market space.

"Companies are finally realizing

that technology is coming at them quicker and quicker, and leaders are having to make technology decisions and deliveries on shorter time frames," says **James Wetherbe PhD.**, a veteran technology observer and the *CIO Perspectives* conference moderator. In this new economic environment, leaders must harness the power of technology to transform their businesses to excel in changing times. As Wetherbe notes, "Organizations have to be more nimble if they're going to be capable of changing business processes to incorporate new technologies."

Nearly 20 years ago now, when ATMs were first introduced at banks, the financial services industry was slow to change its processes and customer

services. But the early ATM adopters, as slowly as they tiptoed into these uncharted waters, gained distinct market advantage over rivals who stayed ashore. "Companies don't even have that much time anymore," Wetherbe says. At Internet speed, organizations move now or suffer soon the immediate consequences of diminished market share. He will illustrate this point with insightful anecdotes about FedEx, which anticipated and prepared for the arrival of new technology-fired business processes, and Barnes & Noble — which didn't.

Big businesses aren't alone in their response to rapid change. Big schools, too, are reeling from the effects. **John P. Kotter**, Harvard Business School professor and author of *John P. Kotter on What Leaders Really Do*, will speak in two contexts: the first, about the companies he has observed gaining early advantage in the Now Economy; the second, of how people in his own profession — education — are perhaps moving too slowly. "Harvard Business School is essentially a division of a corporation that's 370 years old — a corporation that's been very successful," Kotter says. And while other venerated institutions have begun changing their curriculum and teaching methodologies to adapt to the Internet, he adds, Harvard has been slow to embrace change. "It's a real challenge for us to be brought into the 21st century," Kotter says. "The job of the faculty here has not changed much — yet. But we are going to have to start thinking about how we can do things differently. There are all kinds of neat possibilities."

Business and technology leaders from a variety of organizations new and established, for profit and non, goods manufacturers and "feel-good"



WELCOME

service providers have successfully bridged the gap between the old and now economy. Their common bond is their drive to thrive in response to unprecedented, unpredictable change.

In the “dot.com” world, e-commerce innovators are wrestling with the challenge of transforming their marketplace and their customers’ mindsets. At Autobytel.com Inc., for instance, **Ann Delligatta**, executive vice president and COO, oversees an e-business that wants to change how people buy cars. But what she’s found is that to achieve that goal, her company must change how it appeals to customers. “The e-consumer wants to be ‘in charge’ of the transaction. They want to buy, not be sold to,” Delligatta says. “The successful e-commerce site will provide them with the data, the experience and the tools to do just that.”

Delligatta sees organizational challenges and opportunities, the change in vendor relationships, and opportunities for cooperation and partnership with companies that might not have been considered in the past. The key internal challenge to be met is for business leaders to overcome their own barriers and misconceptions about one another’s roles. “We have been talking for years about the need for tighter collaboration between business and technology leaders,” Delligatta says. “The Now Economy demands that this become pro-active collaboration, with the technology organizations frequently taking the leadership role.”

And don’t think the leisure-time businesses are spared the pains of Now Economy transition. From the film studios to the golf courses, senior executives are facing similar tests. At Twentieth Century Fox, **Justin Yaros**, senior vice president and CIO, is in the midst of an industry — several different

entertainment industries, actually — that is seeing radical, fundamental change. Internally, Fox’s business processes are moving to the Web, allowing executives greater real-time access to distributors, licensees and partners. And in each of Fox’s entertainment mediums — film, television and music — the Internet is on the verge of changing everything. “It may not just change how we offer entertainment, but the very format of what we offer,” Yaros says.

Digital delivery of music, interactive TV, new PC entertainment options —

“Organizations have to be more nimble if they’re going to be capable of changing business processes to incorporate new technologies.”

Yaros must explore all of these avenues and more. “It’s definitely the equivalent of trying to hit a moving target with a weapon that hasn’t been invented yet,” Yaros says. He has been at Fox for just over two years, and in that time the company has changed dramatically, and so have executives’ perceptions of IT. Yaros has had to adjust to a more prominent role in the company, and has had to make major technology decisions not on what systems will do, but on what they might do — and what the marketplace might demand.

Even in the leisure resort industry, where executives thought they knew everything they needed to know about their customers and their habits, new technologies are spawning new customer service trends. **Michael Dillard**, executive vice president and CIO of ClubCorp Inc., recently learned an interesting lesson about his company’s 250,000 leisure resort members. Dillard and other ClubCorp executives always assumed that ClubCorp appealed to the

stereotypical country club members — older, grayer folks who are not especially attuned to technology. But in a recent customer survey, Dillard found that his membership is much younger and more tech-savvy than anyone believed. “Over 90 percent of our members use the Internet, and Web surfing is their #2 leisure activity behind reading,” Dillard says. “It turns out our members expect a lot from technology.”

Consequently, ClubCorp used this customer feedback to completely reengineer its delivery of services. Dillard is building Web sites for each of the com-

pany’s 240 clubs and resorts, helping them to create online affinity groups of members who want to schedule leisure events or just chat. New customer relationship management (CRM) systems help club employees recognize and greet members at the door; and new chip-embedded membership cards will give members free, prepaid reign of the facilities so that they don’t have to carry cash. Internally, ClubCorp is centralizing and streamlining its processes so that it can deliver better services faster. “That’s the part that has to be invisible to our guests,” Dillard says. “Our goal is making life better for our members and our guests. If we can use technology to do that — well, that’s really the rallying cry for what we do here.”

As leaders toss out many of their traditional business approaches, some traditional enterprises find themselves at a crossroads — particularly in the non-profit sector, which is insulated from the windfalls of venture capital and soaring stock values. Consider the American



Red Cross (ARC). For decades, the ARC has been a low-tech, decentralized institution whose chapters have grown up knowing distinct geographic boundaries. Yet today, with the power of the Internet, this non-profit organization's practices are being challenged. "How does an historic institute adapt to a digital environment where geography is irrelevant?" asks **Thomas Woteki**, CIO of the ARC. For the most part, his answer has been, "Slowly."

Since joining the ARC in 1994, Woteki has introduced new technologies to track data about the organization's blood business (the Red Cross holds about half the nation's blood supply), and now he is bringing the chapters together via the Internet. Yet, the seemingly simple act of taking the ARC online raises a whole new set of fundamental business questions: should the individual chapters have their own discrete sites or be part of just one, centralized Web strategy? Currently, each local chapter raises its own funds. How does that change when the geographic boundaries are removed? How does the ARC respond to competition from other health service agencies that now have access to the same customer base and can provide some of the same services? To answer each of these questions, Woteki raises an even more strategic question: "How do we leverage our logo and brand name in the context of our humanitarian and service mission?"

Most business leaders reacted to Now Economy forces; a lucky few were able to ride the wave as it broke. And then there were the very few leaders who anticipated the great change. **Rob Rodin**, former CEO and President of Marshall Industries, was one of these leaders with foresight. Six years ago, he started a revolution that saw his 53-year-old electronics distribution business transition

painfully from the old to the Now Economy. Marshall was a successful \$500 million enterprise in 1994, but Rodin and other business leaders foresaw the need to move the traditional, brick-and-mortar business online. They knew that market forces were pushing for electronic commerce, yet they had no foundation to enable it. Virtually overnight, Marshall changed its management staff, eliminated sales commissions, switched operating systems and completely reinvented itself as a business-to-business e-commerce venture. "We restructured every definition of value in our organization," Rodin says — and it was a painful transition. Yet the gain from this pain is that today Marshall Industries is a \$2 billion e-commerce leader by which other enterprises must gauge their own Now Economy transitions.

Rodin details Marshall's experience in his book, *Free, Perfect, and Now: Connecting to the Three Insatiable Customer Demands: A CEO's True Story*, and he will relate some of his lessons learned. Like any fundamental business transformation, Marshall's story is not a dispassionate one; it's personal. "I'm not a consultant; I did this to myself," Rodin says, and his is a message that resonates with other business executives who face similar situations. "People always say to me, 'It's nice to hear how scared you were,'" Rodin says. "It's a real story; it's human."

And it's repeating itself now, in every aspect of business and society around us.

Tom Field is a Senior Editor at CIO magazine. Contact him at tfield@cio.com

Bing Brings Machiavellian Influence

Ever find yourself in a business situation where you wonder, "What Would Machiavelli Do?"

Well, Stanley Bing has — many times — and he's written a new book detailing his conniving, manipulative answers.

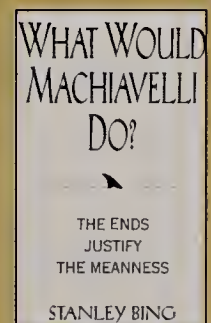
"My book is a handbook on how to get mean and nasty," says Bing, a pseudonymous New York business columnist. "Who other than CIOs could be in more need of Machiavellian assistance?"

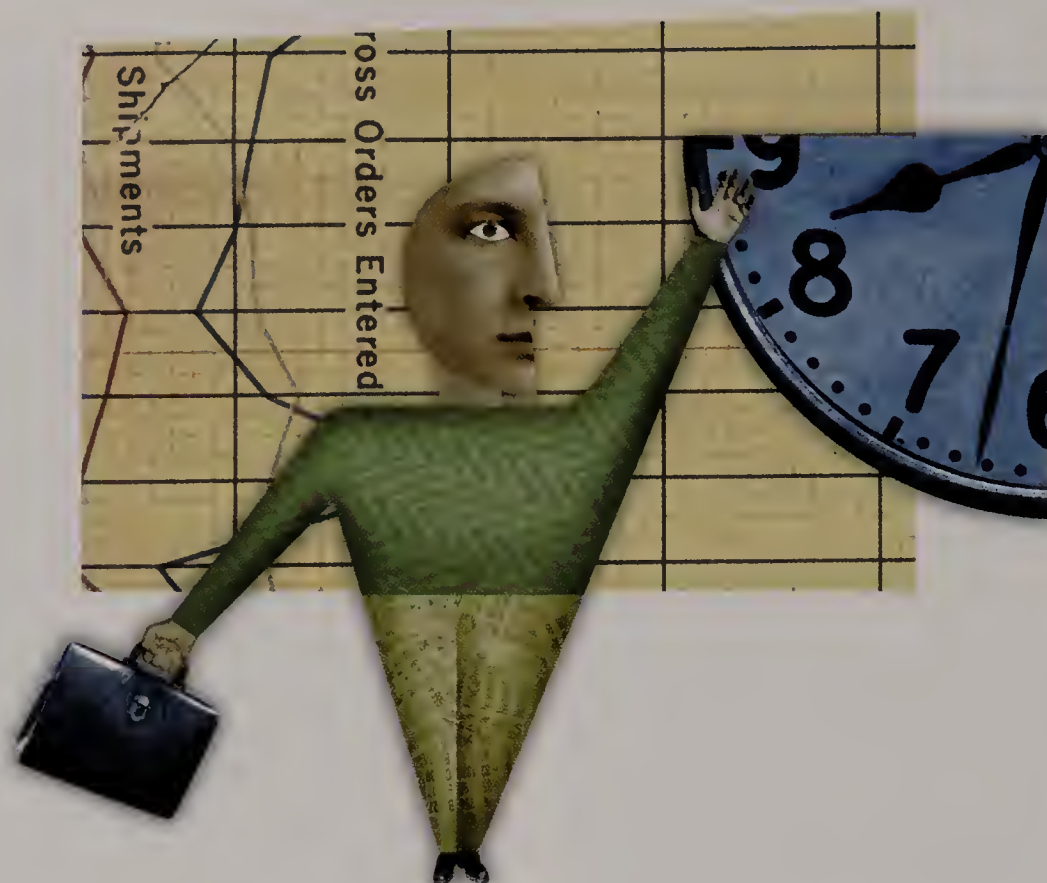
Bing, who has long chronicled the real-life business experience in his popular *Esquire* and *Fortune* columns, is no stranger to the CIO mindset. "CIOs tend to be anal-retentive types, but at the same time they're quite dreamy," Bing says. "Raging within these grey pinstriped suits are Corvette-driving, party animals yearning to burst free. These people tend to respond well to the rude comments I make."

Bing's book and presentation revolve around a common Machiavellian theme: the ends justify the meanness. Among insights Bing will share are:

- Be unpredictable
- Be a paranoid freak
- Always be at war
- Lie when necessary

"I'm the anti-Harvard Business School," Bing says, distinguishing himself from keynote presenter John P. Kotter, an HBS professor. "HBS is based on the principle that business is a rational occupation," Bing says. "I embrace the opposite." — *T. Field*





The Face of the Now Economy

APRIL 16-19, 2000 • RITZ-CARLTON • NAPLES, FLORIDA

SUNDAY, APRIL 16

11:30 a.m.

The Leaderboard Classic Golf Tournament

Hosted by Cabletron Systems, Inc. and Lockheed Martin Corporation

3:30 p.m. – 5:30 p.m.

Conference Registration

6:30 p.m. – 8 p.m.

Welcome Reception and Registration

8 p.m. – midnight

Hospitalities/Networking

MONDAY, APRIL 17

7:30 a.m. – 8:30 a.m.

Breakfast

8:30 a.m. – 9 a.m.

Welcome, Opening Remarks and KnowPulseSM Poll



GARY BEACH
Publisher
CIO Magazine

The KnowPulse ("Knowledge") poll, an ongoing opinion poll conducted by *CIO* magazine, captures IT and business executives' perspectives on

current topics in the news. Past polls have been covered by *CIO* magazine, as well as other prestigious media organizations, including *CNN*, *Newsweek*, *The Wall Street Journal*, and *U.S. News & World Report*.

9 a.m. – 9:45 a.m.

Organizations Must Be Nimble, Organizations Must Be Quick



DR. JIM WETHERBE
Conference Moderator
FedEx Professor of Excellence
The University of Memphis
Executive Director
FedEx Center for Cycle Time Research

Rampant technological change has led to the need for rampant organizational change. We've seen product life cycles shorten dramatically over the past several decades. We are now seeing that organizational business models have shorter life cycles. This has caused the need for organizations to dramatically change the way they do business, almost overnight. Wetherbe will discuss some of the aggressive approaches that need to be followed for organizations to be nimble enough to achieve quick changes as needed during these turbulent times.

9:45 a.m. – 10:45 a.m.

Entertainment — Reinventing the Industry



JUSTIN YAROS
Senior Vice President
and CIO
Twentieth Century Fox

While new media have emerged, the fundamentals of the film industry remain much the same since the first movies were made and distributed in the early 1900's. Digital technology and the Internet are leading to a complete revolution of how entertainment is created, distributed and consumed. One need look no further than the music business to see how technology can virtually overnight uproot the fundamental rules of an entire industry. The Internet and technology, along with MP3, have caught the giant recording companies sleeping and have threatened to turn them and their billion dollar infrastructures into the dinosaurs of the digital age. Yaros discusses how Fox is working to understand and prepare for both the threat and the opportunities technology represents to the entertainment industry.

10:45 a.m. – 11:15 a.m.

Coffee Break

11:15 a.m. – 12:05 p.m.

Business Briefings

12:10 p.m. – 1:10 p.m.

Luncheon

1:15 p.m. – 2:15 p.m.

Navigating in the Digital Marketplace



ANN DELLIGATTA
Executive Vice President
and COO
autobytel.com inc.

Autobytel.com has revolutionized the way people shop for and buy cars. Since its inception in 1997, the company has become the market share leader in online car sales, currently generating over a million dollars an hour. Delligatta discusses how they responded to the unprecedented expectations of the Now Economy customer, and how this translates into specific requirements for CIOs and business executives. She discusses potential organizational challenges and opportunities on the digital marketplace horizon, and offers strategies for CIOs and business executives at various stages in this evolving process.

2:20 p.m. – 3:10 p.m.

Business Briefings

3:10 p.m. – 3:40 p.m.

Coffee Break

3:45 p.m. – 4:45 p.m.

Connecting to the Three Insatiable Customer Demands



ROB RODIN
Former CEO and President
Marshall Industries, Inc.

In a world where knowledge is king, the Web never sleeps, and competitive challenge increases exponentially, Rodin reveals how

CIOs should prepare for and respond to the three insatiable demands of today's customers: they want their product or service for FREE, they want it PERFECT, and they want it NOW.



Attendees will receive a complimentary copy of his work, *Free, Perfect, and Now: Connecting to the Three Insatiable Customer Demands: A CEO's True Story*.

5:30 p.m. – 7 p.m.

Reception

7 p.m. – midnight

Hospitalities/Networking

TUESDAY, APRIL 18

7:30 a.m. – 8:30 a.m.

Breakfast

8:30 a.m. – 9:30 a.m.

Making Life Better for Our Members and Guests



MICHAEL DILLARD
Executive Vice President
and CIO
ClubCorp, Inc.

Excelling in the private clubs industry has always been about high-touch, not high-tech. Today, ClubCorp, the world's largest owner of golf clubs and resorts, is busy marrying the touch and the tech. With over 70% of its members using the Internet at least once a day, the company is challenged with finding ways to use technology to attract and retain more members and increase club usage. Innovative use of

CONFERENCE AGENDA

the Internet is one mechanism, and technology that supports smooth operations is another. Dillard discusses ClubCorp's technology strategy and presents an overview of the careful considerations required before melding high-*touch* and high-*tech*.

9:30 a.m. – 10:30 a.m.

The American Red Cross and the Now Economy: Moving One of America's Most Trusted Logos into the Digital Economy



THOMAS H. WOTEKI, PH.D.
CIO and
Senior Vice President
American Red Cross

At nearly 120 years old, the American Red Cross (ARC) is one of the nation's most trusted and respected institutions. Its logo is a symbol of hope and trust recognized everywhere. Moving the ARC into the Now Economy involves delivering its traditional services via the Internet, while protecting its most important asset—the Red Cross brand identity. Woteki discusses how the ARC is rethinking its service delivery models—the traditional geographic and institutional boundaries the ARC is having to reset (or eliminate) to meet market demands at Net speed; and the new business models necessary to compete with other “.orgs” for volunteers, donors and customers.

10:30 a.m. – 11 a.m.

Coffee Break

11 a.m. – 11:50 a.m.

Business Briefings

Noon – 1 p.m.

Luncheon

1 p.m. – 2 p.m.

A Networking Experience

An exclusive time set aside for you to meet with your peers.

2 p.m. – 2:50 p.m.

Business Briefings

3 p.m. – 3:50 p.m.

Business Briefings

3:50 p.m. – 4:15 p.m.

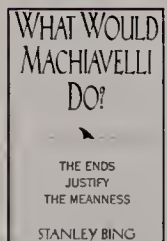
Coffee Break

4:15 p.m. – 6:15 p.m.

Business Life Through the Prism of Machiavelli



STANLEY BING
Author, *What Would Machiavelli Do?* and
Lloyd: What Happened



How did the rich and powerful individuals who move the earth get where they are today? Are they smarter? Faster? Better looking? Certainly not. Some are even short and ugly. What, then, is their edge? The answer is simple. They're meaner, that's all. And if you want to get where they're going, you'll be meaner, too.

Walking in the steps of the Florentine master, Bing will show you how to be all the Machiavelli you can be. How to beat people who are smarter than you are. How to make other people cringe and whimper when you enter a room. How to get what you want when you want it whether you deserve it or not. Without fear. Without emotion. Without finger-wagging morality. They do it. You can too.

Bing offers a simple, detailed plan for those with the courage to leave kindness and decency behind, to seize the future by the throat and make it cough up money, power and superior office space.

6:15 p.m. – 7 p.m.

Reception with Stanley Bing

7 p.m. – midnight

Hospitalities/Networking

WEDNESDAY, APRIL 19

7:30 a.m. – 8:15 a.m.

Breakfast

8:15 a.m. – 8:30 a.m.

KnowPulseSM Poll Results



LEW MCCREARY
Editorial Director
CIO Magazine

McCreary will present the results of Monday morning's poll.

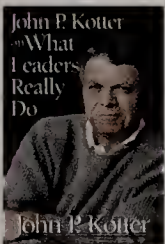
8:30 a.m. – 10:30 a.m.

Leadership and Change: Challenges in the New Economy



JOHN P. KOTTER

Konosuke Matsushita
Professor of Leadership
Harvard Business School



Author, *John P. Kotter on What Leaders Really Do*

The speed of change will continue to increase, driven by technology, globalization, increasing competition, and many other factors. Yet most of us have not been raised in a world in which non-incremental change was handled well. So we struggle. We do what we know how to do; we try to manage change. We too often miss the key ingredient — leadership. So projects move too slowly, cost too much, and give us far too much aggravation. Kotter discusses the common shape of successful change efforts and the leadership engine that drives them.

10:30 a.m. – 11 a.m.

Coffee Break

11 a.m. – 11:30 a.m.

Question & Answer Session with John P. Kotter

11:30 a.m. – 11:45 a.m.

Closing Remarks

JIM WETHERBE



Individuals need fast, easy and reliable access to the information stored in their core business systems so they can make fact-based decisions on the turn of a dime. To achieve this, the information must be presented so it can be quickly consumed, shared and acted upon by an organization's diverse group of users. Glassey presents how organizations should approach their business intelligence infrastructure for achieving maximum information value for all business channels, including the Internet. She discusses key attributes that are necessary for deploying successful e-business intelligence solutions.

IT Infrastructure Evolution: Enabling the "Anytime, Anywhere, Any Access" Business Model



JOHN ROESE

Chief Technology Officer
Cabletron Systems, Inc.

Author, *Switched LANs: Implementation, Operation, Maintenance DHCP: Automated IP Management*

Infrastructure technology is an enabler of the new Internet economy. Roese examines new and emerging technologies that facilitate a more automated model of information access to meet the needs of an increasingly mobile, diverse and demanding customer community. He addresses the increasing need for mobile access; developments in unified security access technologies; delivery of

BUSINESS BRIEFINGS

Business Intelligence: A Strategic Imperative for the e-Enterprise



KATHERINE GLASSEY

Co-founder and Chief
Technology Officer
Brio Technology

In today's e-enterprises, business executives no longer have the luxury of waiting days, weeks, or months for information they need to make decisions.

customized transport services based on business policy and organizational structure; and using next-generation service-level management to meet customers' IT demands.

Leading Change at Now Speed



JODY DAVIDS
Senior Vice President
Information Technology
Cardinal Health Inc.
Courtesy of Lockheed Martin

With the explosion in Internet and E-commerce activity, globalization, shorter product life cycles and fierce competition, businesses must have the constant and rapid ability to change in order to keep pace with normal business growth.

To be able to meet these demands, the successful IT executive must develop a variety of approaches that improve and innovate solutions delivery to organizations where change is constant, and speed is a key requirement. The challenge intensifies when companies become excellent at product innovation and the ability to re-invent themselves in order to stay fresh and relevant.

With employment history spanning companies with two of the best-known brand images in the world, Davids offers a broad array of approaches to managing large-scale change, including sourcing strategies, partnerships, methods, tools, process reengineering, and technology utilization. She discusses these and other approaches, with emphasis on business results and impact.

Customer Interaction and eBusiness — Tying It All Together



COLLIN BRUCE
Vice President
Chordiant Software

Customers are placing increasing value on convenient access to information, products and services. In the next generation of online commerce, companies must become customer-centric to attract and retain business. They must provide consistent, high-quality service across all communication channels including the Internet, e-mail, self-service systems, call centers, and branch outlets.

Bruce details how global companies are offering customers highly personalized e-business, marketing, sales, service and support across all communication channels.

Application Service Providers: The New Utility for the Information Economy



DAVID A.G. JONES
Senior Vice President
Worldwide Sales
Citrix Systems, Inc.

What if your company could "turn on" access to applications as easily as flipping a light switch or twisting a faucet? Until now, organizations requiring software — from e-mail to ERP — had to shoulder the cost and complexity of their own computing environments. Constant upgrades, IT staff shortages, support for remote users, compatibility issues — these

are some of the challenges of in-house computing systems. The emerging Application Service Provider (ASP) industry is replacing this scenario with a simple solution: for a set fee, ASPs host applications on central servers and deploy them to users according to agreed-upon service levels. Enabling this new "utility" model is server-based computing technology that delivers fast, reliable application access over any connection to users on any type of device. Just like phone service or cable TV, applications are ready when you are.

Managing Information Across the Extended Enterprise



TERRY MILHOLLAND
CIO
EDS

As desktop computers, hallway copiers, and handheld devices evolve into two-way portals to the world of information, companies are being transformed into extended virtual enterprises where employees, suppliers, suppliers' suppliers, customers, and customers' customers exchange information on a regular basis.

Every individual participating in these extended enterprises is a data owner with a digital persona, consisting of a unique personality and specific preferences, rights, and needs for information. In tomorrow's business environment, CIOs will be faced with increasingly complex decisions regarding who owns what information, who has access to what information, and how they are allowed to use it.

Enterprisewide E-Business: The Case for Both Clicks and Mortar



TONY LEACH
Executive Vice President
Operations and Services
E.piphany

The future of e-business relies on the seamless integration of an organization's e-channel with traditional distribution channels. Increasingly, companies are discovering that many customers do not want a single channel to buy their goods. They want the convenience and prices of the Web, a store and a person to talk to, someone they can reach on the phone, and even a catalog to hold in their hands.

What companies need is a system that allows them to achieve a single view of the customer to enable insight and personalized action across all touch points. Companies need to provide customers with what they want, when they want it and through the channel that they prefer. This session will discuss strategies for achieving life-long customer relationships.

NUMA-Q: An Open Minded Enterprise Solution



IAN MILLER
Vice President of
Global Marketing
IBM Corporation

Miller highlights NUMA-Q enterprise-class system features and reveals how organizations can benefit from this open minded server solution. In its third generation, NUMA-Q pro-

vides the investment protection needed to preserve mission critical applications, including e-business, business intelligence, and customer relationship management solutions. With the Intel Architecture at its core, NUMA-Q has incredible flexibility, high availability, and scalability to meet fast changing business requirements while minimizing customer and partner risk.

Developing the eKnowledge Center



THOMAS MURPHY
Research Manager,
IT Advisor
International Data
Corporation

The age of electronic knowledge has arrived, and organizations in every industry sector are rushing to find ways to increase, improve, and leverage their knowledge capital. To accomplish this, companies need more than the technology. They need a strategy to organize and plan their knowledge efforts. As research manager for IT strategies at IDC, Tom Murphy recently completed a study that defines how organizations can create an eKnowledge Center. The presentation he has prepared from his data describes the role that the CIO and the IT organization can play in building knowledge capital across an organization and linking the different areas of knowledge. In the presentation, he also describes the "Left Brain/ Right Brain" concept of developing a balanced focus on knowledge across an enterprise.

The Third Generation of e-Business



CHRISTOPHER S. THOMAS
Director, Strategic
Marketing, Enterprise
Server Group
Intel Corporation

The evolution of e-Business is moving at a stunning pace. The first generation of e-Business meant posting static information about your company's products on a Web site. Then came the second generation—integrating your Web site with your internal business processes to enable e-commerce across the Internet. But is your company ready for the *third* generation of e-Business?

Do you know how to improve your customer's Internet experience and empower them to make better and faster decisions? Advanced planning for this paradigm will be critical to create a competitive advantage for your company. Come hear Intel and other industry leaders' vision of the third generation of e-Business, and find out how your company's business Internet systems and solutions need to be designed to succeed in this new era.

CONFERENCE AGENDA

The Balancing Act: e-Business and the Information Backbone



ED KOEPFLER
President
Intentia Americas

Ice cream, furniture, personnel recruitment, dairy. What do these companies have in common? They figured out how to be profitable with e-business. What's their secret? They learned to leverage best practices and effective management approaches with the right information technology backbone to ensure success. Koepfler explores the strategies, implementation and payback of completing an enterprise infrastructure for the greatest impact on business and e-business.

Managing Your Firm's Mobile Intelligence – Today and in the Future



ANDREW WALSH
Partner and CTO
Ernst & Young Assurance
and Advisory Business
Services



DR. JAMES TAYLOR
Futurist and Author, *The Handbook of the Visionary*
Courtesy of Iomega

What can IT management do today to protect the mobile corporate data that resides off of the network? What concerns will they face in the next few years with the advent of the "Internet 2.0"?

Managing a mobile workforce that generates intellectual property on remote applications can be a tremen-

dous challenge. Sales, audit, engineering and finance professionals that are not tethered to the network have critical data residing on their notebooks that is virtually unprotected. Preparing for and managing a mobile workforce will be equally demanding in the future as well.

Walsh will discuss practical approaches to design, develop and implement applications and resources to prevent corporate information loss in field-based environments. Dr. Taylor discusses the implications of the "Internet 2.0," the next generation of web technology in a world where the individual is continually more empowered to construct his or her own world — wherever and whenever.

Information Continuance: Integrated, Independent and Intelligent Solutions for the Enterprise



PAUL PAYACK
Vice President, Marketing
Legato Systems, Inc.

Today, customers are telling us that they must increasingly leverage their corporate data assets to make timely and knowledgeable business decisions. To do so, they require a solution that is complete, open and integrated. However, all too frequently, data and applications are still managed independently. As a result, businesses are having difficulty scaling their information systems across a variety of platforms — and across their enterprise. And the steadily shrinking "backup window" further impedes their ability to implement

time-critical decisions.

Payack discusses how businesses must manage data movement across the enterprise to make the most of their data assets and enhance customer value. He explains how to deploy the infrastructure and technology necessary for effective management of data movement.

Connecting E-Business to The Business



SCOTT STONE
E-Business Vice President
Lucent Technologies

Whether you are an established company looking to transform your business through an e-Business program or a new online venture looking to link to real-world logistics and fulfillment, all enterprises face a growing need to integrate Web-based customer interactions into the physical world — and its existing systems environment. This includes rapidly emerging requirements to integrate intelligent communications networking with e-Business strategy.

Stone discusses the cutting-edge technology that allows enterprises to establish their e-commerce infrastructure as a competitive asset. He discusses the differences in deployment for enterprises with the need for legacy system integration versus green field implementation, and how both approaches can lead to competitive differentiation.

Creating a Business-centric Model of the Enterprise Network

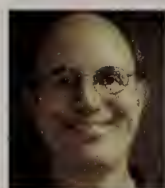


BOBBY LIE
Senior Vice President
Fidelity Investments
Courtesy of NetScout

The cost to deploy and maintain a network infrastructure is ever increasing. The cost increase is driven by the need to facilitate a wave of new applications in support of e-business such as Web call centers, video streaming and on-line trading. While end users perceive network bandwidth as a free commodity, the spiraling cost of network usage continues to escalate from 30 to 75 percent a year.

To address this business need, Fidelity Investments recently deployed a Usage Based Billing system, a framework for monitoring the amount of resources consumed by customers and billing them accordingly. Lie discusses how within the first year, Fidelity achieved an ROI of 500% as well as other productivity gains such as increased application responsiveness, capacity planning, and improved relationships with information technology customers.

From CIO to CEO: How ITM Places the CIO at the Business Strategy Table



JOHN CIMRAL
CEO
ProSight

What does "CIO" stand for? Judging by the impact of IT on the business, it should be "Chief Influence Officer." Almost every major business initiative contains a significant IT component. However, every functional area has had an enterprise application to manage themselves like a business, except IT. The burgeoning market for IT Management (ITM) Solutions fills this void. Cimral discusses how ITM allows the CIO to manage the IT asset like an investment portfolio, and proactively drive IT budgeting and strategic planning processes. He will also reveal how one of the most respected companies in the world uses ITM to ensure that IT investments are aligned with business objectives, and that business unit stakeholders have a full appreciation for IT investment decisions.

Automating the Entire Online Process - From Order Entry to Fulfillment: A Case Study



DOUG BROWN
Director of Operations
Periodical Publishers' Service Bureau
Courtesy of Xerox

It appeared automated, but behind the scenes the old process was expensive and labor intensive. Once an order was received via e-mail, it was re-keyed into a transaction processing system, credit card transactions were processed by hand, and the fulfillment house received instructions via hard copy, computer tape or e-mail.

Sound familiar? It's a challenge to leverage electronic commerce opportunities, integrate on-line technology with legacy data systems, keep customers satisfied, management delighted and costs down — but it can be done!

Brown will "Share the Knowledge" on how he partnered with Xerox Connect to develop a solution that integrates PPSB's on-line ordering process with its back-end transaction processing systems to support their multimedia Newsstand Web site (www.mmnews.com).

Business Briefings also presented by:

Cable & Wireless
GTE Internetworking
Hewlett-Packard
Information Builders, Inc.
Nortel Networks
Symantec



CONFERENCE HOSTS



Incorporated in 1989, **Brio Technology, Inc.** (Nasdaq: BRYO) is the only business intelligence software provider to offer a complete platform that addresses the full range of decision processing needs and contributes to the overall business performance of today's Web-enabled e-enterprise.

The vision behind the company's flagship platform, Brio ONE, is to provide customers with the broadest range of business intelligence capabilities for users and information sources.



CABLE & WIRELESS

With customers in 70 countries, **Cable & Wireless** (C&W) is a major global telecommunications business with revenue of approximately \$14 billion in the year ended March 1999 and over 50,000 employees. C&W offers a range of services spanning broadband data and Internet services, fixed and mobile voice, as well as interactive entertainment and information. Since November 1998, it has announced major investments in advanced networks in the US and Europe, the restructuring of Cable & Wireless Communications in the UK and has acquired full control of Cable & Wireless in Japan to support this strategy. Visit us at www.cableandwireless.com.



Cabletron Systems — a recognized leader in high-performance networking solutions — has provided reliable LAN, WAN, ATM and remote access communications to millions of people throughout the world. Among its many customers are Fortune 1000 companies; service providers and telcos; federal, state and local government agencies; universities and academic institutions; health care and financial institutions; small businesses and more.

Through its award-winning technology backed by an unrivaled service and support organization, Cabletron delivers scalable solutions that support today's mission-critical applications while lowering the total cost of network ownership and maximizing a customer's return on investment. All of which makes Cabletron your *e-business communications specialist*.™

To learn more call 603 332-9400 or visit us on the Web at www.cabletron.com.



Chordiant Software builds customer relationship management applications tailored for business-to-consumer companies, serving traditional and e-business environments, with a single view of the consumer.

Unlike Web-only and customer relationship point solutions, Chordiant's flagship product, Chordiant CCS — Customer Communications Solution — embraces new customer communications methods while leveraging existing ones.

Chordiant unifies Web, branch and call centers through a single customer model that integrates all services, offerings and business goals. As a result, Chordiant allows enterprises to retain customers and grow revenue by enabling more sophisticated relationships.



Citrix Systems, Inc., (Nasdaq: CTXS), headquartered in Fort Lauderdale, FL, is the global leader in application server software and services that offer "Digital Independence™" — the ability to run any application on any device over any connection, wireless to Web. Citrix is one of the world's fastest-growing software companies, with more than 100,000 customers, including 99 of Fortune 100 firms. Its products include MetaFrame™ software and Independent Computing

Architecture (ICA) technology. Citrix was recently named to the Standard & Poor's 500 Index.



EDS is a professional services firm that applies consulting, information and technology in innovative ways to enable clients to improve their overall performance.

Through an "end-to-end" portfolio of services that includes all aspects of electronic business, EDS is the provider of choice for thousands of leading businesses and governments around the globe. EDS' business is making clients more successful. The company works with its clients to extend their enterprises and catapult them ahead of the competition. It provides thought leadership and creates measurable value by unleashing the full potential of information and technology.

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Coaching: What Managers Need

With some guidance, new managers will thrive. And so will their coworkers.

FINDING THE RARE PERSON who can wear a technical, business and management hat is a tough job for the CIO. New managers need training but rarely get it. "Some companies have HR courses or will pay for outside training; but in general it's hit or miss, not required or not oriented to the [right] issues," says Rory LaGrotta, a senior IT executive at a major California company who has worked in senior IT spots at companies like GTE and Clorox.

LaGrotta, who spoke under the condition her employer remained nameless, advocates assigning "guidance counselors" for new managers. They should be experienced managers from the same field and should be available to answer questions and offer advice. LaGrotta also recommends moving managers frequently between different projects and teams so they get breadth of experience. "It teaches them to work with different types of people, but you will take a hit on productivity as a result," she warns.

Another way to help ease the transition—and minimize risk—is partial job rotation, suggests John Sullivan, chief talent officer at Agilent Technologies. An up-and-coming manager could sit in the CIO's desk one day a week. If the manager likes it and shows she can handle the job, she'll move into it when the time comes.

The first step into management may be the most painful, but with the right mentor it's where managers learn the lessons that propel them into leadership. "I remember myself as a cocky technician who thought the world revolved around the technician as opposed to the customer," says John Lochow, executive vice president of worldwide systems and logistics for Tech Data Corp. in Clearwater, Fla., recalling his first management job. His boss, a second-level manager named Barbara, urged him to develop communication skills if he wanted to get anywhere in his career. He did and has held several executive positions at large companies since.

Without Barbara's help, he's sure he wouldn't be a CIO today. "I suspect I would have been a very good technical resource somewhere that people used but only tolerated," he says.

—P. Schneider

Best Software. The project was running behind, so one of the managers came up with an elaborate bonus plan to motivate the team. However, no one got to the root of the problem: There was no concrete plan for making the deadline. "Engineers saw this huge carrot but they couldn't get there," Foster says. "People were very frustrated and unhappy."

Do you address conflict?

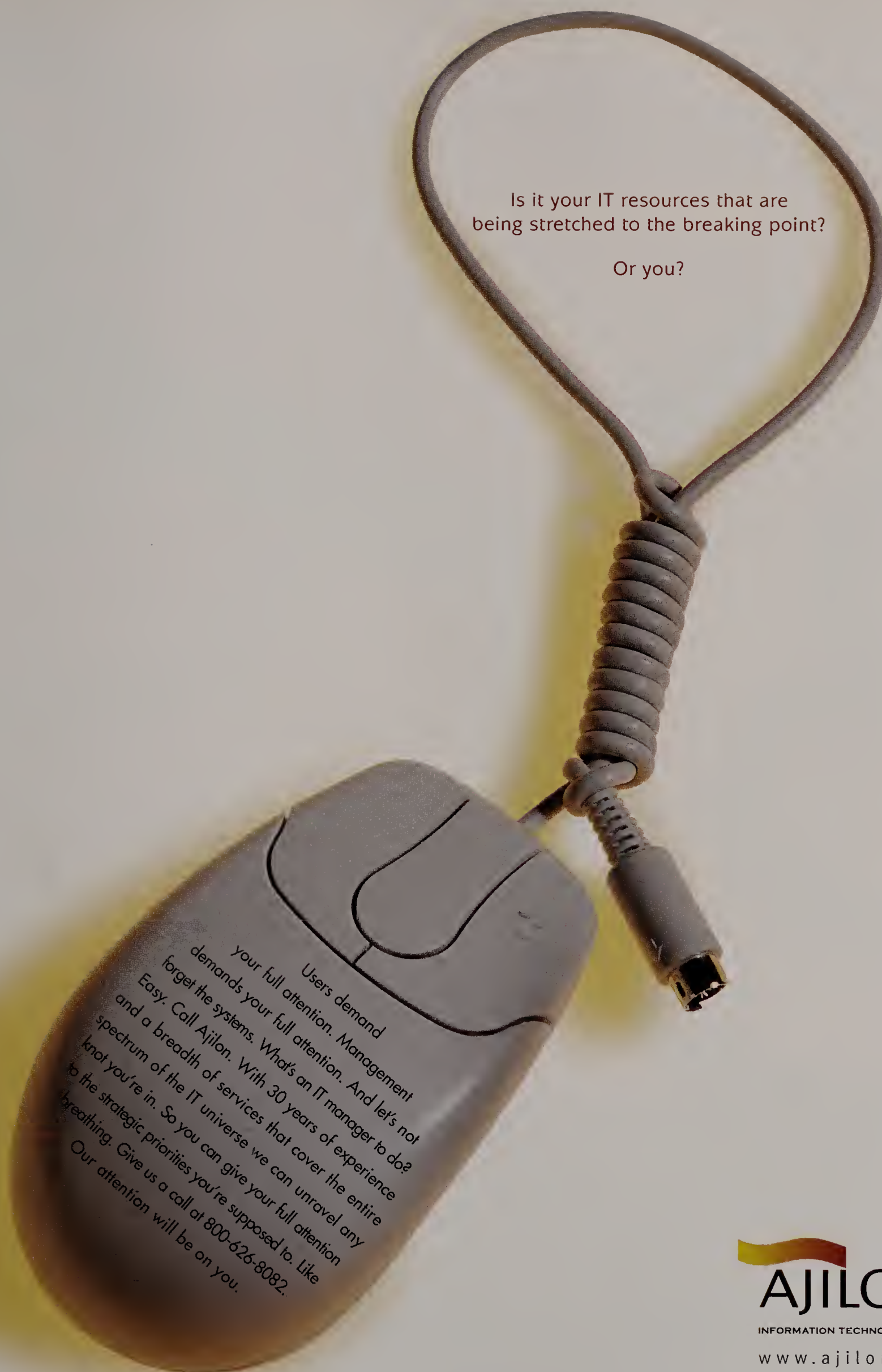
Being tough also means resolving conflicts—whether they're personal or political. Poor managers frequently avoid confrontation, which often comes back to haunt them at performance review time, Keast observes. If you're glossing over criticism, stop. You're doing both yourself and your employees a disservice. State the problem directly and discuss it. Some managers also shy away from intervening when their employees are having problems with other managers, which can damage relationships on all fronts. "Say you're a systems analyst, and you're having a problem with the CFO," Keast explains. "If the CIO is not prepared to intervene politically, nothing gets resolved."

How managers deal with conflict is a matter of personal style, however, and may also reflect the culture of the organization. Some prefer to approach problems head-on; others encourage employees and managers to resolve their differences without direct intervention from the top. Often, the most appropriate style depends on the situation at hand.

One of the toughest jobs for executives is handling sensitive situations between managers and their reports. How do you deal with an employee complaint about his manager? If it's an issue of compensation or benefits, go to the HR department. If it's a personal issue, try to confirm the allegations indirectly through others, if possible, before approaching the manager. A breach of company policy may require the CIO to step in herself.

CIOs need to be on the lookout for bad behavior among their managers because nine times out of 10, they won't hear about it until it's too late—like when an employee leaves—if at all. This means observing managers when they interact with employees, sitting in on team meetings, and evaluating and rewarding managers for their soft skills and ability to retain employees. It also means checking in with your staff from time to time. Ask them: Are you happy? Is your manager supporting you in your job? What can we do better? But your managers and your staff can't save you from yourself. Ultimately your behavior and management style sets the tone for how others will behave in management situations. It's your leadership that will determine the strength of your team and how long you can keep good people. **CIO**

Is a manager in your company driving people out the door? Senior Writer Polly Schneider wants to know (pschneider@cio.com).



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BY MEG MITCHELL

Law in Order

The Company: Dickstein Shapiro Morin & Oshinsky

Founded 1953 **Revenues** \$107 million **Location** Washington, D.C. **Employees** 550, including 230 attorneys **KM Problem** How to create a unified method of gathering information in a company with isolated and fragmented information sources **URL** www.dsmo.com

IF THERE'S ONE THING lawyers have in common, it's that they don't throw a lot away. That's good news when attorneys locate a court transcript or a memo that will save their client's hide in court, but it can make things sticky for those faced with searching through mounds of paper and electronic documents for an errant piece of information.

Although such a scenario seems ready-made for a knowledge-management-based system, law firms aren't generally known for technical daring, and many are still mired in the land of filing cabinets and fragmented islands of information. But as the Washington, D.C.-based firm of Dickstein Shapiro Morin & Oshinsky is learning,

expanding the access to institutional knowledge across a law firm makes for a more efficient day in court.

Dickstein Shapiro's efforts to organize its information began in 1992, long before KM became a buzzword du jour. The IT department reviewed the attorneys' document production efforts during a migration to Windows, examining the way the company created and dispensed memos and letters to clients and cocounsel. Based on attorney input, the group decided that the firm needed a way to standardize document creation so that attorneys could concentrate on what went into memos rather than how to format them.

Once that was in place, it made sense to track what documents went to which clients. "We decided it would be a good thing to collect the knowledge that occurs between the user and their clients," says Keith D. Berkland, application development manager for the firm. So in 1996 the firm's IT department introduced a system that records correspondence from an attorney to a client, allowing subsequent attorneys for the same client to review previous work. That meant all attorneys in the firm had access to the same information about a particular client



Dickstein Shapiro's **Fran Durako**, director of IT, and **Keith Berkland**, application development manager: Their efforts have united disparate knowledge sources into one research system.

rather than having it inhabit the brain of one or two people. And the seeds of knowledge management began to sprout.

But while the document management system and the relationship management system helped the firm move toward the larger goal of knowledge sharing, it didn't integrate disparate sources of information. Dickstein Shapiro attorneys worked from as many as 30 or 40 different litigation databases as well as paper documents and electronic documents in dozens of formats that stored memos, briefs and transcripts of court proceedings. Users had to learn to use several different applications if they wanted access to all of the information. The system didn't track e-mail, nor could attorneys use it to search through court transcripts and legal

briefs. What's more, attorneys fresh from law school had no quick way of learning how to find what they needed. The firm used mentoring efforts to teach newbies, but that consumed both time and money. And the longer it took new attorneys to learn their way around, the longer it was before they could start billing hours on their own.

That's when Angelo Arcadipane, the firm's managing partner, approached the IT department and asked for a system to record and categorize precedence information, which is the knowledge that comes from memos, letters, briefs and opinions related to a particular case. Berkland and Fran Durako, the director of information technology, decided to use that request to institute a companywide system that centrally

Attorneys were relying on the institutional **knowledge** of one person to cover their **research** bases.

stores and integrates information. "To us, [knowledge management] meant sharing and disseminating information in the simplest and most relevant way possible for the users of the information (the attorneys) to do their work," says Durako.

Assessing Needs

The two decided to use the 125 members of the firm's insurance practice as a pilot group. They chose the insurance group because it works with the most disparate types of information, such as complex insurance statutes that vary from state to state.

Much of the research responsibility for the insurance practice fell to Cherylyn Briggs, insurance research and resources manager for the firm. As the keeper of the insurance group's records and a lawyer herself, attorneys sought her help for case research, which involved examining transcripts, opinions and legal memos from the library's system. Alternatively, attorneys would send an e-mail around asking if anyone knew about a particular case or issue.

Both parts of the system were fallible, however. "[Research] was limited by how much I could read through," Briggs says. For instance, she scanned transcripts looking for particular keywords. If she didn't spot them, the attorney—and the client—were out of luck. "Attorneys could never be confident that they had seen everything we'd produced," says Briggs. And no matter how good Briggs was, attorneys were still relying on the institutional knowledge of one per-

son to cover all their bases. As for the e-mail queries, whether the right person received and read the e-mail was anybody's guess.

System Focus

So Berkland and Durako gathered two attorneys and five members of the IT department to assess the company's KM needs and find a system that fit. They primarily wanted a system that let users search and index the firm's knowledge stores without having to pull that information from its native environment. So, for example, if a piece of information resided in a Notes database, they wanted a system that could search that database rather than physically move the data to a new environment just so a user could search through it.

In early 1999, after a search that took nearly a year, the review team settled on Fulcrum Knowledge Server from Hummingbird Communications in Toronto. Besides being able to work in native environments, the system allowed for customization. And, says Berkland, the firm already had a good working relationship with the company.

After deciding on Fulcrum, the review team brought in members of the insurance group, including Briggs, and other IT staffers to assess the group's informational needs. Berkland began attending their weekly litigation reviews to get an idea of what documents the attorneys were interested in accessing. Through the information extracted from those meetings and conversations with attorneys, the IT department zeroed in on the two main needs of the insurance group. Insurance attorneys usually looked for either a particular type of document to use as a template, like an outline for preparing a deposition, or information about recurring legal insurance issues, such as what damages are covered under what circumstances or the meaning of certain words in insurance policies.

The group then began to restructure each data repository (databases, Word documents, SQL files) to fit the needs of the insurance attorneys. They also reviewed cabinets full of paper files, which they scanned into

EXPERT ANALYSIS BY THOMAS H. DAVENPORT

Better Late Than Never!

The approach to knowledge management described in this case is similar to that of a consulting firm or computer manufacturer in the mid-'90s. Indeed, there were many firms in those high-tech industries for which knowledge management was a similar outgrowth of word processing and e-mail. But the law is often a profession unto itself, and at least the esquires at Dickstein et al. have jumped on the knowledge management bandwagon before many of their industry peers. In fact, there are several wrinkles in this case that make it an instructive—if not groundbreaking—example.

Law firms are actually better at document management than most organizations. For example, the first organization I ever saw that actually employed the "document properties" prompt (you know, the "author, title, subject, keywords" screen that you have turned off) when saving Microsoft Word files was a law firm. The great majority of legal knowledge is eventually embedded in a client document, so if you control the flow and storage of documents, you've got your finger on the pulse of knowledge. Making knowledge management a straightforward extension of document management is a good idea.

It was also smart to pilot the changes in a relatively small part of the firm. Any technology-related initiative is a big change for a law firm, so you need to identify a particularly receptive subculture with which to get started. I don't know if the insurance group in this case meets that description, but at least their knowledge needs were unusually complex.

There are two big challenges that this firm will undoubtedly face with its KM initiatives, one in the short term and one later on. The short-term issue is the behavior of attorneys—especially those nontechnical ones who have been out of law school for 20 years or so. Unless they are willing to learn about the details of web-based knowledge searches and fit new knowledge behaviors into their daily routines, all the knowledge from the Supreme Court on down won't do them much good. It may be a cliché to say, "If IT builds it, they won't necessarily come," but it's still true. The popularity of Cherylyn Briggs, a "knowledge intermediary" for the insurance group in the case, is evidence of a fundamental belief that real lawyers don't do knowledge management. When Briggs is named managing partner of Dickstein, we'll know that the behavior problem has been solved.

The long-term problem is one that other professional services firms still haven't cracked. Lawyers generally bill by their time. So what happens if they can do a lot more productive work in an hour because of knowledge management? If competitive law firms adopt such KM approaches, they may all be forced to pass the savings on to their clients, and hence lower their own incomes. It's fine to talk about "value billing," but calculating the value of the 47th use of a client letter's content will never be easy, nor invisible to the client. Like many IT innovations, knowledge management may be good for individual productivity but bad for industry economics.



Thomas H. Davenport is a professor of management information systems at Boston University School of Management and director of the Andersen Consulting Institute for Strategic Change. He welcomes reader comments at davenport@cio.com.

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the system. The group worked for the first six months of 1999, and the system was initially installed in June. But Berkland cautions that capturing all the data is an ongoing process. "Adding to the knowledge stores is like feeding a hungry elephant," he says. "It never ends."

After doing some testing, Berkland and Durako set the insurance group loose on Fulcrum in September 1999. Users primarily access the system through a web browser with a password, and all of the information is available to each attorney instead of just to Briggs. The system indexes disparate repositories, such as transcripts, opinions, e-mails and legal memos, verifies a user's access and delivers the results in a common screen interface, searching more than 150,000 documents and returning the results in less than a second. For example, a search on a possible witness's name would return any previous depositions the firm had had from that witness; similarly, a search on asbestos and Company B would return anything related.

Look to the Future

There were several inevitable bumps along the way. For one thing, the system didn't record who first authored the documents—crucial to attorneys who want to talk to the author or verify the information. Durako and Berkland added a field to Fulcrum to include that information. E-mail is still not



Dickstein Shapiro's **Cherylyn Briggs**, insurance research and resources manager, can now search through more than 150,000 documents in less than a second.

tem, Durako and Berkland have witnessed enough success that they plan to extend the system to the other groups in the firm.

For example, Briggs tells the story of an attorney who was preparing to depose a wit-

of another witness's deposition, it didn't show up in the original search. Without Fulcrum, the original deposition would have remained out of sight.

The IT department plans to expand the system to other sections of Dickstein Shapiro, a slow process that involves an analysis of each group's informational needs. Durako also plans, ultimately, to build an enterprise information portal that will allow cocounsel and clients to communicate with the attorneys. But that's in the future. For now, the goal is simple. Remember the e-mail messages attorneys send around to figure out who in the firm knows something about a particular topic? "We'll have had total success when those messages disappear," says Durako. **CIO**

Have any KM ideas you'd like to share and have analyzed? E-mail us at casefiles@cio.com.

"Adding to the knowledge stores is like feeding an elephant. It never ends."

—KEITH BERKLAND, APPLICATION DEVELOPMENT MANAGER, DICKSTEIN SHAPIRO

managed systematically: currently, users must manually add e-mail information to a knowledge store that's unique to each client in the system. If they forget, the information is essentially lost.

But while there's no way to make sure every crumb of knowledge gets into the sys-

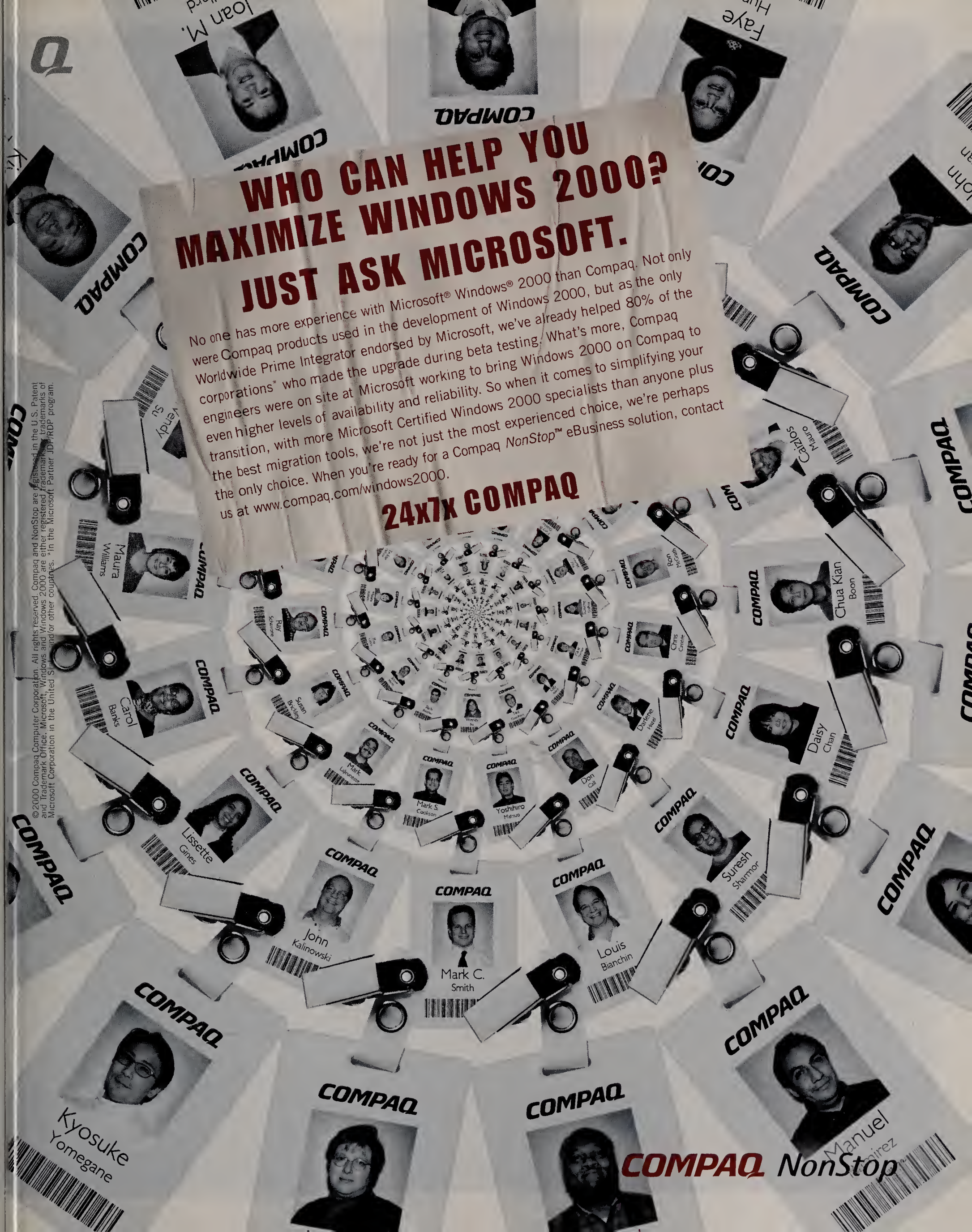
ness from an insurance company. After a search of paper files turned up no mention of the witness, the attorney assumed that the firm had never deposited him. But a full-text search on Fulcrum revealed that the firm had indeed deposited the same witness for a different case. Because that deposition was part

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More isn't always better, especially when it comes to information. Here are eight essential steps to creating actionable information.

BY JANE LINDER AND DREW PHELPS

It's not news that CIOs today are struggling to keep up with the speed and complexity of business. Like everyone else in an organization, IT professionals are aiming to pick up their pace and their reach. But while many companies are addressing the escalating demand for information by creating larger "storage bins" and making sure they can pull more information through their expansive networks, others have begun to realize that it's just not going to be that easy.

What they need is an approach that will encourage action out of the current computerized clutter. Busy executives can act quickly if disjointed data is shaped into clear analyses and implications. But how? Through information design. This is the art of making complex information speak simple answers to managers' questions. And it's no simple task because the designer has to understand the question,

Read this article to learn

- How good information design speeds business decision making and improves the quality of decisions
- How to get started

ion



the context, the data and its meaning, and how to communicate it graphically. By designing information in such a way that it's fit for use—making what we call “actionable information” in today's fast-paced,

infrastructures is only the start. After consolidating your fragmented data, you must be able to envision pulling out actionable information to drive top- and bottom-line performance improvements.

Well-designed data isn't just clean data; it must drive performance improvements.

information-overloaded environment—you can construct meaning out of the clutter of disjointed data fragments. It's important to start with data that is clear, truthful, timely and obviously meaningful in the context of the decisions at hand. It must also be distilled to its essence and organized so that it gets its meaning across effortlessly.

Sounds great. But the truth is, companies are painfully short of actionable information, and their CIOs are not using information design practices to create it. In spite of the fact that IT leaders rate actionable information important for decision making—4.8 out of 5, on average—most are not on a track to get there. Three obstacles stand in the way. IT professionals

- Are unfamiliar with information design
- Do not get their hands dirty with content
- Are not thinking graphically

Simply stated, IT executives are not tuned into information design. Many of them define information design as making sure the data is regular, clean and accessible by the audience. They believe that well-designed data simply means understanding where information is created, where it's used, how it's maintained, what its rules are for validation and how it flows.

Managing data on this level is very important to most organizations, but it doesn't bridge the gulf to actionable information. Building solid, reliable data and messaging

Unfortunately, most CIOs don't know how. Andersen Consulting's Institute for Strategic Change asked IT executives if they had a process for developing actionable information, and they answered with a resounding no. Eighty-six percent reported that they have no process or that they plan to use the traditional IT requirements definition and data-modeling processes. These are the same processes that have been instrumental in creating today's nonactionable information environment. In either case, they aren't talking about an information design process.

Some information professionals believe their responsibility ends when they've provided users access to information, not actionable information. These IT managers are immersed in managing the computing and data infrastructures—the input side of the equation—instead of focusing on the outcomes their companies need. They're hot on the trail of ubiquitous networks, integrated transaction platforms and well-populated data warehouses. When asked what kind of information will give them an edge in the marketplace, they reply, “That's up to our marketing department.” Information designers, on the other hand, unanimously assert that you can't design information unless you understand both the question you face and the data you're using to answer it.

IT executives are not only unfamiliar with

the process of information design and reticent about getting involved with content, they also seem unaware of the power of visual analysis and communication. We asked them how they're using graphics. Most mumbled something about PowerPoint and Excel. In contrast, to true information designers, designing information does not mean making slides with bullet points. It means arranging information in a way that communicates it visually. That means breaking out of the constricting business definition of graphics as bar and pie charts. Ironically, IT executives use visual analysis extensively for designing systems architectures and for flow-charting software. It just isn't on their radar screens for business decision making.

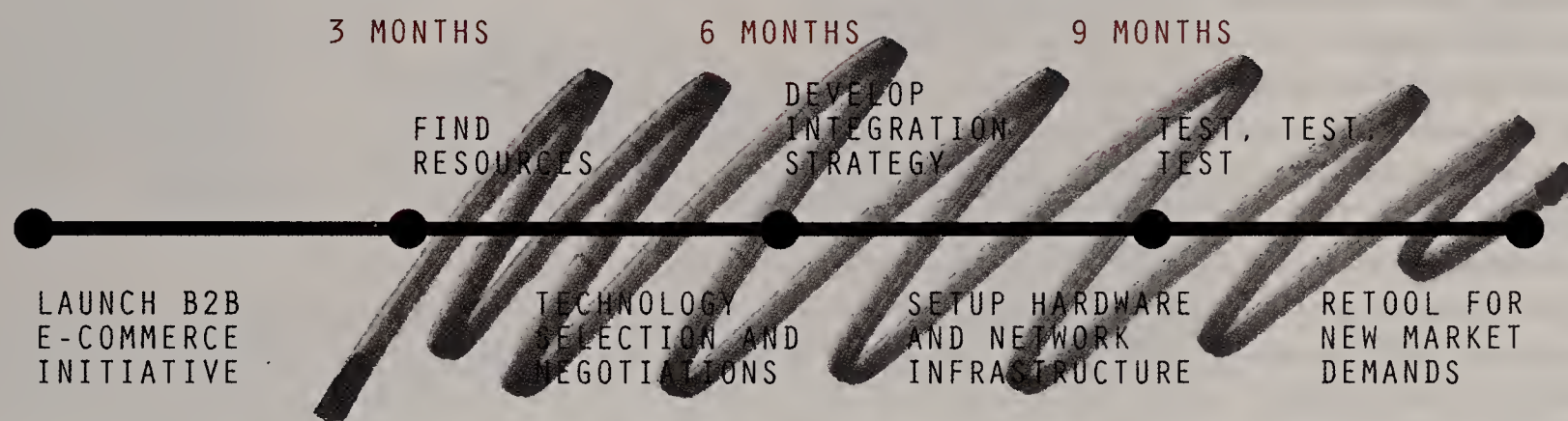
Having well-designed, actionable information will help your company move at the speed of business in eight ways.

1) Highlight Opportunities

Design information in a way that helps you see patterns in the data to provide insights and point toward action. For example, the history of Harvard Business School's MBA program laid out on one page reveals that the school made big curriculum changes roughly every decade or so—a schedule that no one in the administration was tuned in to. Yet it wasn't a massively exhausting project to put this data together. Creating the chart took a day; it was another few weeks until the staff was able to determine from the information that it was time to revamp its curriculum again—what would be considered blinding speed in any traditional organization.

2) Set Priorities

Good information designers start by asking the question, What's most important here? Then they let the answer drive the design. Since the arrangement of the data changes its meaning, this approach focuses on the fundamentals and lets the data tell its own



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Attention to Detail

The U.S. Army is using actionable information to make complex decisions at lightning speed

Building actionable information is a tall order, but it is doable. Just ask the U.S. Army. Four years ago, the Army's training doctrine command took a look into the 21st century and concluded that it had to make a substantial change in the way the organization worked. Its vision hinged on actionable information. The Army believed it could improve the fighting force's speed, flexibility and effectiveness if it could give everyone real-time answers to three key questions: Where are we? Where are our subordinates? And where is the enemy? (For more on this story, see "Armed with Intelligence," *CIO*, August 1997.)

Sounds simple, but it frequently took as long as seven hours to answer these questions in the field so that an officer could make a decision about what to do next. Business leaders' ability to come to grips with urgent issues—such as a competitor's price change—is often no better.

The Army started a four-year initiative to create one division—15,000 soldiers—of 21st century land warriors. They provided a computerized map—what they called a "common operating picture"—at each command level, from the soldier to the general. Like a strategic video game, it displayed a running view of friendly forces, enemy forces and critical supplies collected by a variety of transponders, sensors, drone-mounted video cameras and GPS information. And the information design was tailored to the individual in front of the screen. The division commander could see the whole threat region, while the sergeant inside a tank saw the terrain relevant to his or her unit.

Seeing the big picture changed everything. The commander could sketch out a battle plan on the screen with a light pen. At the touch of a button, it would be transmitted to his staff so that they could talk together about the plan. In seven minutes—not seven hours—the commander could issue a new operations order. And this one's got the benefit of direct field input.

Having actionable information changed the pace of decision making for the Army by two orders of magnitude. That, in turn, changed the pace of battle and enabled the soldiers to handle more complex activities on more fronts. When they started the initiative, this division was ranked as the least ready deployable force. Now, when they face off against the Army's other troops in training exercises, these soldiers are lethal.

First, they changed what it means to be an information professional in their organization. They call them signal officers, and they're responsible for both intelligence and information management. Furthermore, every soldier and officer has the responsibility not just to pass data along but to ask the right questions, to judge what's important and to draw implications.

As you might imagine, such a redistribution of authority shakes a traditional hierarchy to its foundations. And it changes the way they manage. They can see a problem and take a decision at a pace that doesn't leave room for double-checking or dithering. Finally, the Army was able to create its real-time common operating picture because its leaders had the courage to face the truth. When the troops are failing, it's obvious to everyone. Many business executives would prefer to control perceptions more carefully. They frequently forgo the chance to fix real problems when it means facing the issues honestly.

—J. Linder and D. Phelps

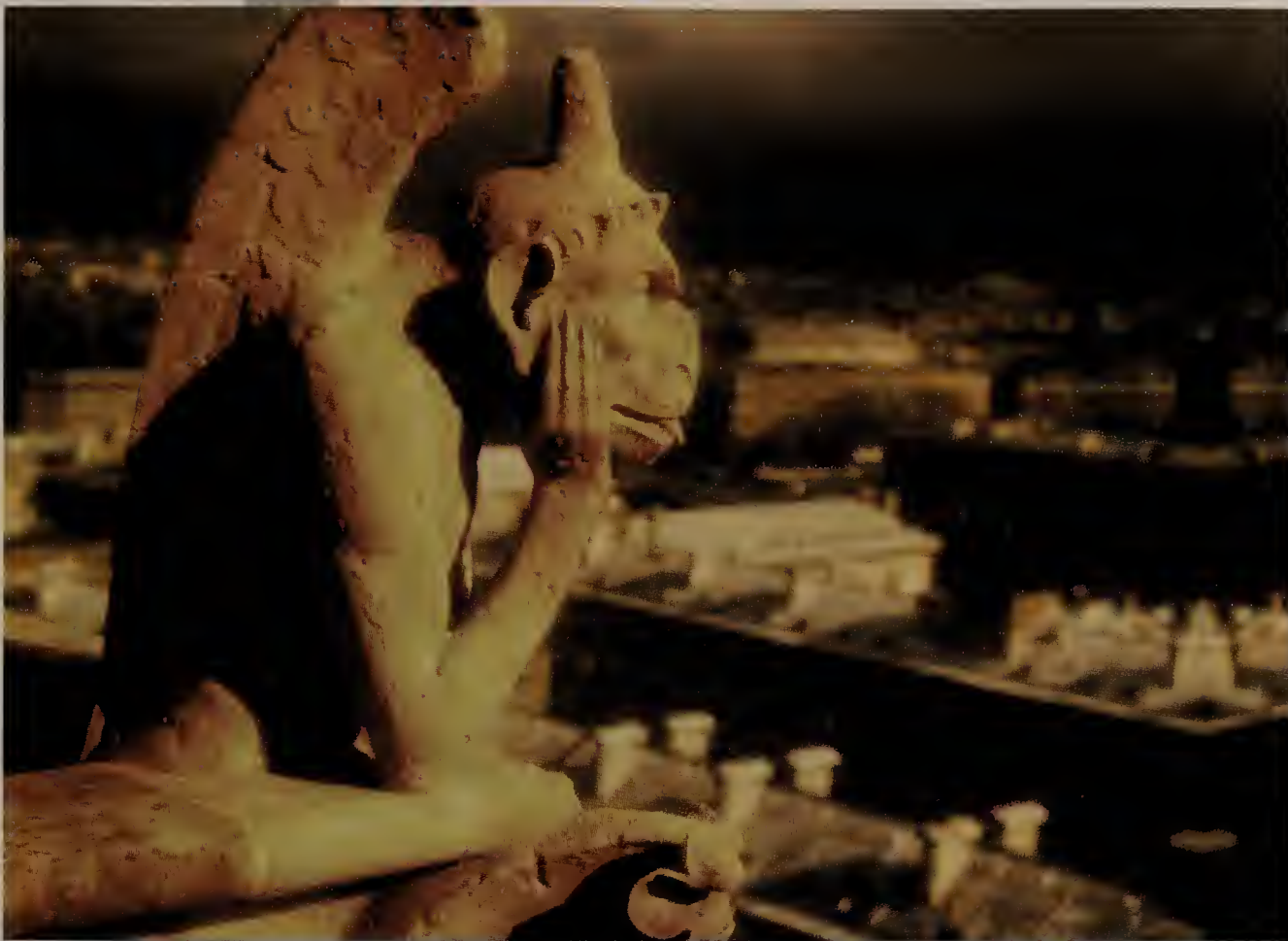
story truthfully. Designers also pump up the analytic impact by substituting rates and ratios for raw data and distilling data so that it fits on one page. A clutter of raw numbers can become meaty comparisons when charted over time, contrasted to goals or arrayed in one meaningful graphic.

3) Create Consensus

Experts think of information design not only as a process but as a product. It provides a common platform for people to compare their mental models and bring them into alignment quickly. The members of one high-tech leadership team thought they knew what they wanted for their website. Through one session with an information design professional, where each executive's personal perspectives were sketched out in real-time, they found out how far apart they were. The process let them see and discuss what they'd been missing—each person's hidden assumptions and unspoken needs that would have undermined consensus sooner or later. Root Learning, a consulting company that specializes in using information design to help leadership teams communicate their strategies throughout the organization, develops a series of poster-size graphics after intensive meetings with executives. These graphics convey the company's business challenges and strategic directions. Then the company's leaders use them to facilitate conversations with their employees about where the company is headed and what each part of the organization can contribute to making the journey successful.

4) Communicate Convincingly

Information should tell its story in a clear, simple way so that even the most casual observer gets the message as effortlessly as possible. Get your audience's attention with provocative headlines and color, then make your message jump off the page with good information design. According to Edward



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Tufte, a Yale professor of political science, statistics and computer science, the space shuttle Challenger was lost as a result of poor information design. In fact, the night before the launch, concerned engineers sent a disorganized jumble of data points about launch failures to NASA flight headquarters. If the information had been designed correctly—say, in a simple chart showing the correlation between outside temperature and O-ring failure—the command team would have seen immediately that the decision to go ahead that chilly morning would have been a terrible mistake.

5) Solve the Right Problems

Executives can't solve performance problems or take advantage of business opportunities unless they see them clearly. A pharmaceutical company couldn't tell why it was losing market share—despite voluminous data on physician prescriptions. When information designers boiled the data down to a two-page spread, it pinpointed the problem—an influential doctor had changed his prescribing patterns. So they targeted the physician personally with a renewed marketing effort.

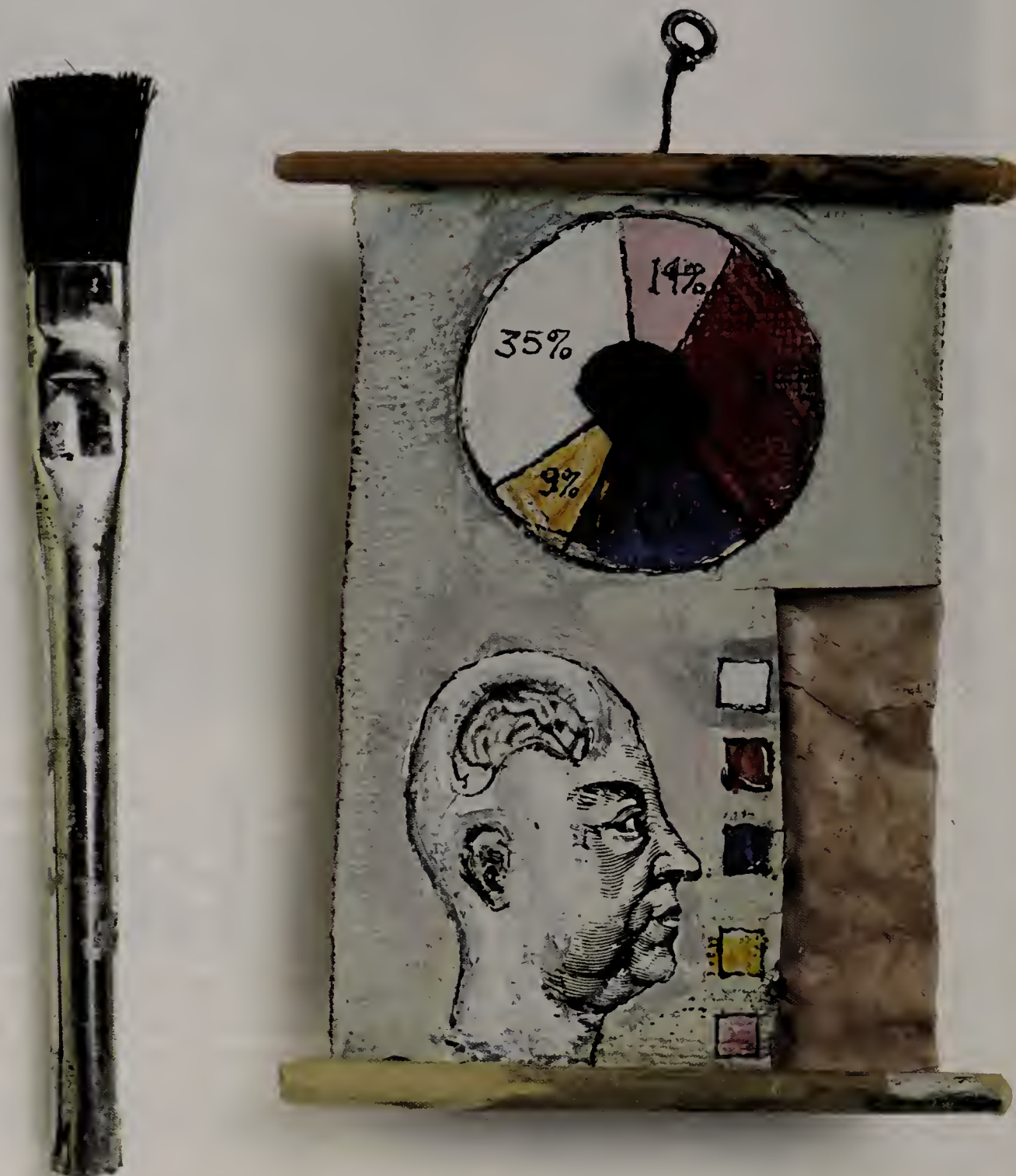
6) Help People Find Their Way Around

The information professionals we talked to use information design to help customers figure out how to use a product or find their way around the website. And good navigation can make the difference between a delighted customer and one who turns his back on you in disgust. For example, a few years back, a major computer company asked Krzysztof Lenk and Paul Kahn of Dynamic Diagrams (now an arm of Cadmus Communications) in Providence, R.I., to evaluate a customer's experience of setting up a notebook computer. Lenk and

Kahn ordered one of the machines to be delivered to their office and started the video camera rolling as they unpacked the boxes. Inside they found a computer and 27 other items, six of which were boldly marked, "Open me first." It turned out that all six of these items were marketing literature and had no instructions for getting started with the computer. Their report documented just how slow and stressful the setup process was, and the computer company asked them to design a solution. They created a map—a large diagram that you'd lay out on your computer table showing you exactly where to place each component you had ordered and exactly how to connect it. Clear and simple.

7) Make Faster Decisions Routine

A large restaurant chain was able to make substantial improvements in restaurant operations by designing a graphical evaluation format. The design condensed a 40-page report into a two-page spread depicting how performance varied across restaurants. In addition to spotting laggards easily, managers were able to quickly see whether the results of pilot improvement programs were paying off. Netscape was able to improve its website by hiring information designers who started by simply documenting Netcenter's current state—graphically—and in graspable bites. Once all the engineers at





It's time to start thinking out of the box
when it comes to business to business.

Netscape could see the flows, they could easily discuss how to improve them.

8) Inspire Break-through Innovation

Information design can be used to help your organization find, confront and use provocative information—new trends, wacky ideas and unsettlingly discordant facts. A major manufacturer discovered the power of designing information for breakthroughs. It wanted to stimulate its design engineers to shift their focus from simply designing new products to providing insights into the ways people would use these products in the future. And the manufacturer wanted fresh new ideas to set a radical course. To put the team in the right state of mind, it papered the walls of a room with a broad array of information snippets about demographic trends, lifestyle changes, technology projections and such. The executives felt that if the engineers stepped back and looked at this collage of information, they would gain fresh insights. The result? This window into the future created more confusion than inspiration. So the manufacturer hired Donovan and Green

so that the reader could explore ideas, discover linkages and drill down—the further one read, the more detailed the answers became. Finally, they used the same structure for each panel so that an engineer could

Good navigation can make the difference between a delighted customer or one who turns his back on you in disgust.

(D&G), working with Richard Saul Wurman, an information design company, to clean up the mess. D&G (now a division of USWeb/CKS) and Wurman started by organizing the data into a system of panels—each with a broad subject like “time deprivation” or “aging population.”

They created an information architecture

move easily from one to another without losing his or her place. They removed the clutter from the walls in this room and replaced it with the panels. What was the impact of their contribution? The company has documented that its design engineers generate more ideas that affect the future of its business than ever before.

Getting Started

Courageous leaders will embrace information design in spite of the challenges once they know what to do

■ **Pilot information design for a mission-critical issue.** Ask the hard questions like, What business are we in? What key plays will determine whether we are successful?

■ **Start developing a new breed of information professional.** You won't get the business edge you need with old-fashioned cross-disciplinary teams. You'll need individuals who have the breadth and depth of skills to cover all three information domains. Train and recruit individuals who know how to do data-intensive research on important business problems, who've gotten their hands dirty with IT and who can communicate graphically. Then aggressively build literacy across your organization.

■ **Ask line executives to lead the charge in making information actionable.** There's nothing easy about transforming your organization into one that uses actionable information to move at the speed of business. There are a thousand reasons why you won't be successful, and you have to fight off every one. What will the biggest leadership challenge be? Standing up for the unvarnished honesty you get when you embrace information design.

—J. Linder and D. Phelps

Executives who want to use actionable information to manage at the rate of business must bring information design into their organizations. But it won't be as simple as hiring a few information designers. Information designers can bring information to life for a strategic decision or design a website so it speaks volumes to customers. And companies should use them this way by all means. The point is, it's just not enough.

Executives must make information design part of everyday information management. That means integrating information design with information technology and data management—exploiting the leverage you get by combining your ability to process transactions quickly, to manage data so that it's clean, accurate and consistent, and to design information to communicate its true message in a hot second. **CIO**

Jane Linder, a former professor at Harvard Business School and IT executive at Polaroid, currently works for Andersen Consulting's Institute for Strategic Change. She can be reached at linderj@ici.net. Drew Phelps is a research associate at the Institute and can be reached at dphelps@mediaone.net.



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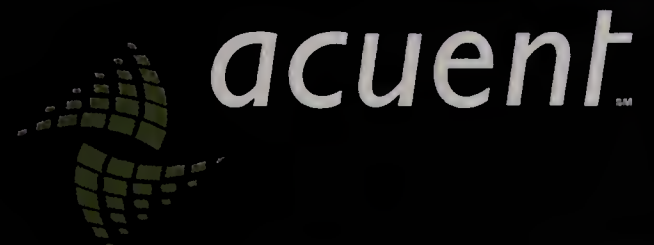
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BY RICHARD PASTORE



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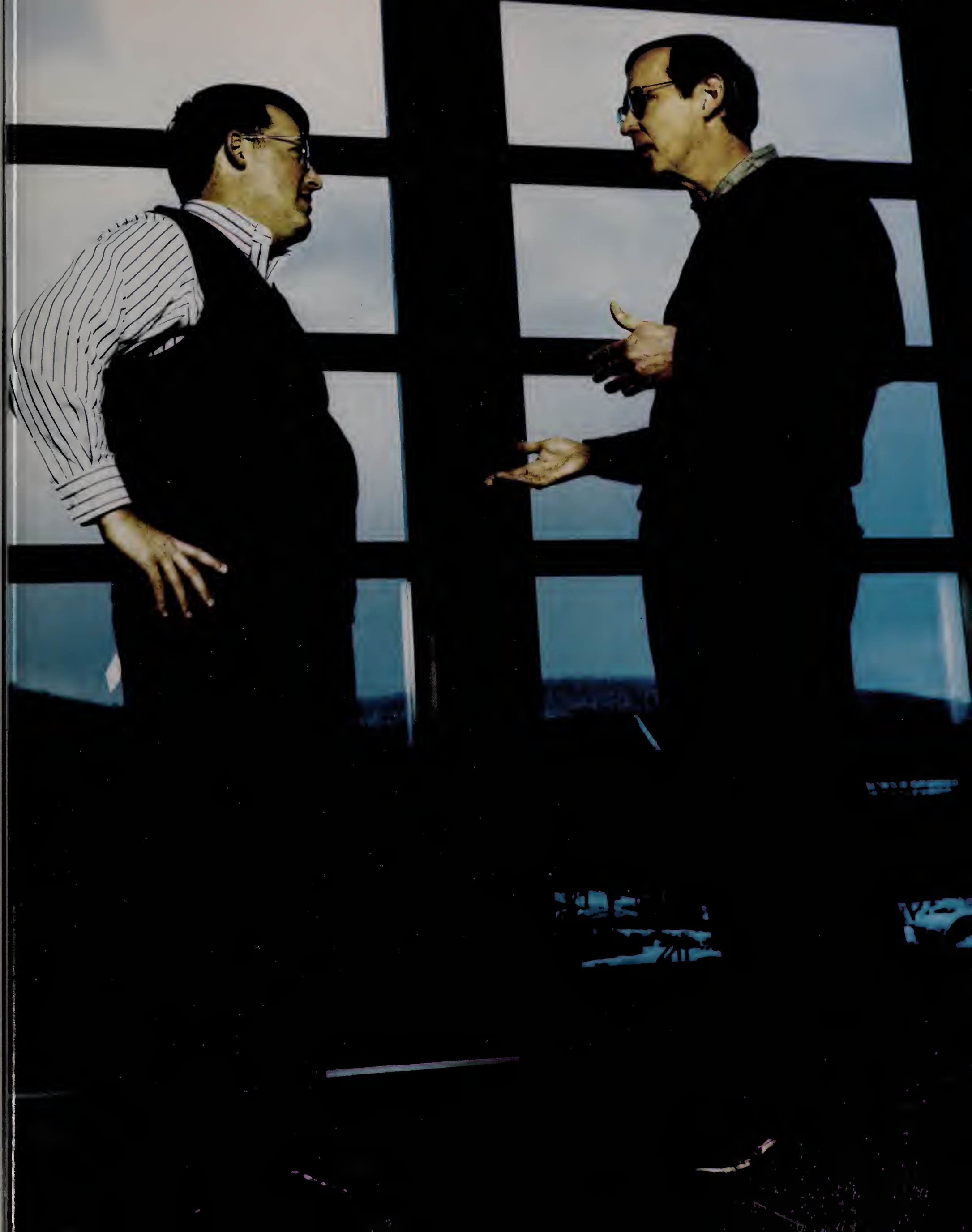
Gene Rindels has been the CIO at medical device manufacturer Respirationics for two-and-a-half years, the first CIO position of his career. He started in IT in 1980 while serving in the Marine Corps. He earned an education degree in 1990 from National University in San Diego. He later worked at the Software Engineering Institute at Carnegie Mellon University and was IT director at Jim Manzi's Nets Inc. At Respirationics, he leads a team of 54, supporting 1,600 users. The \$380 million global company, founded in 1979, went through a restructuring in August 1999 that included plant closings and a 10 percent across-the-board budget cut to boost flat-earnings growth.

When Eugene Rindels was in the Marine Corps, it was OK to make mistakes, as long as no one got killed and learning took place. In the corporate ranks, mistakes are less tolerated. He's seen colleagues, friends and peers fall by the wayside as a company advanced or retreated. When slowing growth draws Wall Street's intolerant glare and restructuring turns the world upside down, it's hard enough for a CIO to lead his own function, pushing the information technology staff out of their fox holes and onto the mist-shrouded battlefield. But the CIO must also lead among his peers, influencing and rallying fellow function and division heads to embrace and enable enterprisewide change—even though they are busy fighting their own local campaigns.



RICHARD FISHBURN
CIO
Corning Inc.
Corning, N.Y.

Richard Fishburn, who has an MBA in finance, comes from an operations background, serving in various positions at Ford and ANR Freight System, a trucking company, including vice president of finance and senior vice president of administration. In 1985 he joined Digital Equipment as vice president of finance operations, then went on to other positions focused on change management and new business models. In 1995 Fishburn was asked to be Digital's CIO, and it took three weeks to convince him to take the job. After Digital's acquisition by Compaq, Fishburn, now warmed to the CIO role, moved to the \$5 billion Corning in April 1999 to head IT.



CIO asked veteran IT chief Richard Fishburn of Corning to advise Rindels on leading his team and uniting his peers in a strategic fighting force.

Rise Above Restructuring

Rindels: Last August we went through a restructuring, which is typical for companies moving through the chasms to get to the next plateaus of their growth and maturity. The IT staff consisted of 63 people prior to the restructuring; now there are 49 people. We reduced staff and at the same time demanded peak performance. Now we risk having the “fog of war,” where people become dazed and overwhelmed by conditions. How can I work with these folks to help carry them through that? How far can I take the team? How hard can I push?

Fishburn: When I came into the CIO position at Digital, we were also going through a period of restructuring. The IT organization was viewed as a cost center, and the people were demoralized. You need to create a positive vision for the organization, something that answers these questions: Why does an employee want to continue in this organization? Why does a new employee want to join? Why should customers continue to do business with us when we’re struggling? The way you do that is to articulate a positive, simple message or theme that you repeat. People tend to believe something when a supervisor says it repeatedly and when people close to them start saying it.

Rindels: It’s a challenge to pull yourself out of the intricacies of technology and translate it into something simple and repetitive. It’s an art form when what you’re translating is constantly changing.

Fishburn: What many people fail to do is create a picture that gives people hope. I think that’s what a leader has to do at these difficult points.

Rindels: When you’re leading your IT organization, that’s one dynamic

and focus. Then you have your executive peer group, and it’s an entirely different dynamic when you try to lead among your peers. You have to look at your peer team and say, “We have to make a difference here. We have to change the way we’re doing business, influence the direction of the company and help everyone tap into the greatness that’s inside of us.” I believe that doing the right thing in the face of Wall Street pressure is a character-defining moment for a company. I have yet to see a ticker symbol that conveys the thousands or tens of thousands of lives that comprise the companies we as leaders are ultimately responsible for. Earnings are important, but we have to think bigger than that. But my peers are fighting their own battles,

so asking them to undertake things for the benefit of the whole corporation is tough.

Fishburn: You need to create a partnership with your peers. At Corning we have adopted a philosophy focused on the competitiveness of our business processes. It creates a shared objective with your business operating peers. When you talk with them about achieving the goal of business-process competitiveness, that’s a shared objective that is hard for people not to engage in. What we say to operating people is that it doesn’t cost much more to codify a competitive business process than to codify a non-competitive business process. But obviously the organization gets a lot more value by having a competitive business process.

“What many people fail to do is create a picture that gives people hope. I think that’s what a leader has to do at these difficult points.”

—RICHARD FISHBURN





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When people come and say, "Here's a check. Go put some technology in," our response is, "No. I have a larger role with my peer group and the shareholders of this company to ensure that when we make an IT investment, we're getting the maximum value from it. So let's have a discussion about the competitiveness of the business process. What plans have you got in place? Do you have change programs to address people issues? Do you have the efforts lined up to be able to do that?"

Rindels: Business processes are not very exciting or sexy. How do you awaken your operations peers to the fact that different operating styles and processes affect the business?

Fishburn: Any process may have a competitive advantage attached to it in the minds of the operations managers. Of course that's not realistic. No company can afford to have every one of its business processes create competitive advantage. And it's unrealistic to believe, for example, that you can do pay-

roll or some other things better than anybody else in the world. What we said to people was, "Let's talk about whether the process for which you have responsibility is competitive." Then at the general manager level, we talked about which processes we can do better than anybody else. And for those particular processes, we ought to be thinking about putting a differential investment into the supporting information technology.

If the business process language doesn't click, you agree on success criteria using the language with which they're comfortable. Then translate that into business process implications with which they can agree.

Share a Common Passion

Rindels: Is there a person at Corning, someone like a COO, who assumes the role of champion, the glue that binds this together? Or is it just ingrained in the culture?

Fishburn: It's a little of both. We get that from with the divisional general managers.

What IS and the managers have in common is a passion for the key business processes of the division to be competitive. Together we champion that goal, and the operations managers pick up on that. But that goal must be managed at a pace at which the organization can absorb it. If you try to over-orchestrate it, then it probably starts to break down because people tend to focus on the mechanics of planning rather than on the content of the plan. As for our culture, when one of our divisions does something well, all other divisions tend to glom on to it and follow it. So you use examples and pride in order to drive the culture of the organization.

Rindels: We don't charge IT costs back to the operating units, and we've recentralized IS spending, so internal customers are getting IT services for free. Although they understand the impact that information technology can have, it's not easy getting their support, because the ownership isn't there. I think our model has to change.

How Quickly Can Your IT Environment Adapt?



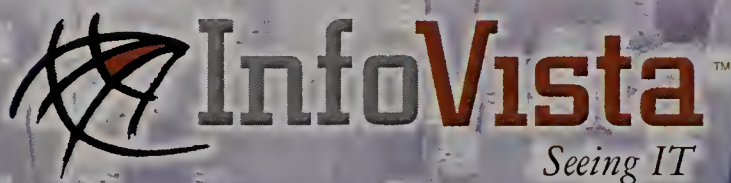
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Fishburn: In some way, shape or form you need to get the IT costs assigned to the business units even if in the first year it's only an approximation. Until the unit managers begin to own the costs, they are not going to engage in a conversation around competitiveness. In our own organization we used to have all the operational-process IT spending in our business units. But the functional IT spending—financing, purchasing and things of that nature—was carried centrally. I made a proposal to senior management to change that, and it was accepted. And I can see a whole set of behavioral changes now beginning to occur because all of a sudden that stuff is no longer free; managers are held accountable for it.

Rindels: Did you hold on to core infrastructure such as the wide area networks and the carrying costs for phone systems and things like that?

Fishburn: We have a shared-service organization for most of the infrastructure. We use service-level agreements. For those ser-

vices where the operations can influence the level of spending, we hold the shared-service organization responsible for a benchmark unit cost and the operation responsible for the number of units. Where there's limited ability for the operation to influence short-term cost, you say, "The wide area network is a cost of the company. We'll talk once a year about whether or not we're doing it efficiently." But other than that, I really don't want to have that discussion.

Companies do that in a lot of different ways. If you're going to do it, make sure it's working for you and that it's not a constant source of conflict with the operating managers.

Learn to Let Go

Rindels: How much do you find yourself moving among your peers at Corning versus managing the IT group? Leaders tend to go to their strengths while under stress, and since I'm a technologist it's been hard for me to let go of my IT team. Yet I realize that I

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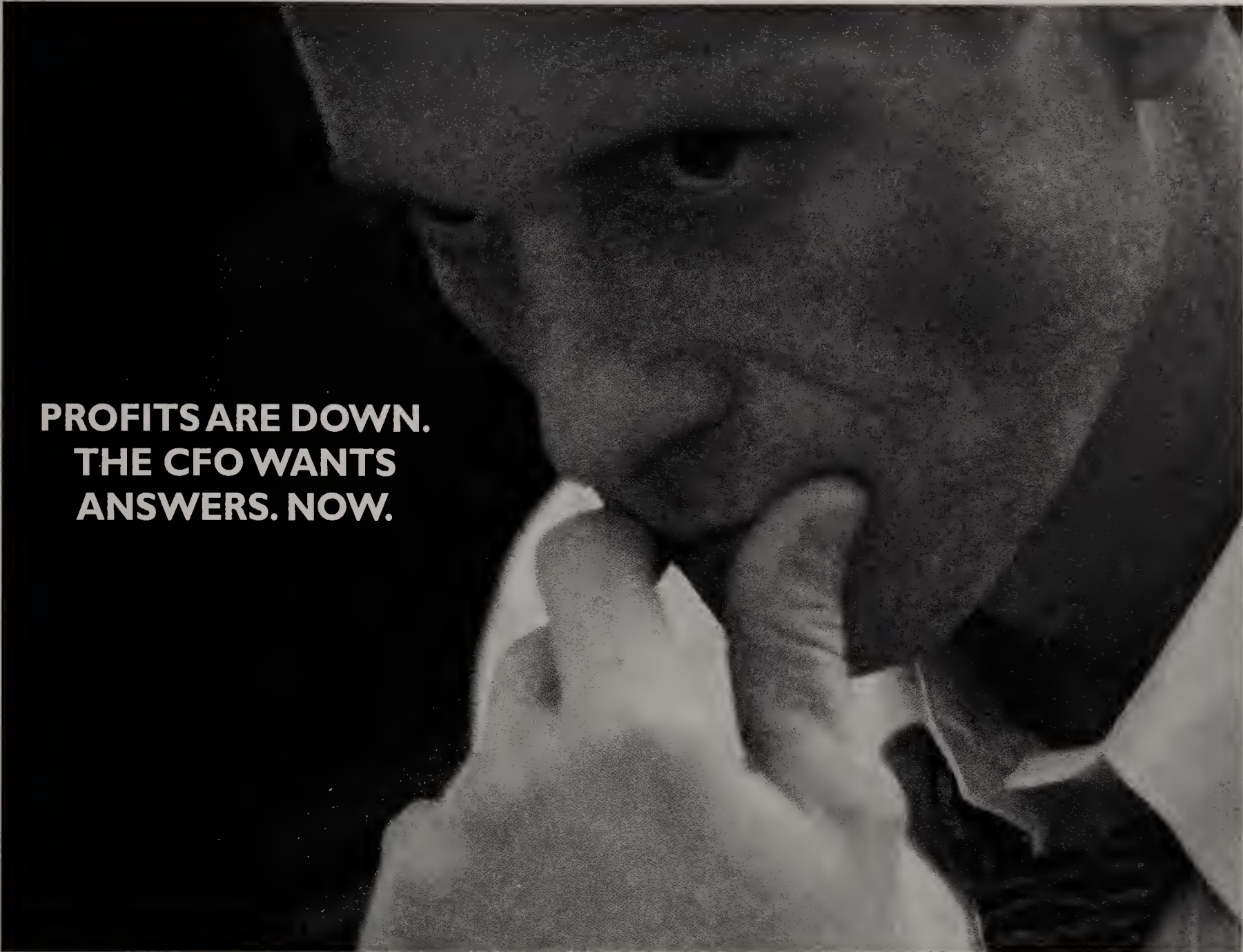
can't accomplish what I need by spending all the time I'd like to with them. I need to spend time with the division president or the division sales vice president. How do you create a successful balance in this area? What do you let go of?

Fishburn: There is not a single answer to that question. It's much too dependent on our individual personalities and management styles. There are people who have a high desire for control, and they're going to manage projects at a fine level of detail. I've always been of the view that when you get to this point you've got to ask yourself, "What is the value that I bring to the organization beyond the management layer that I manage?" If you can look the CEO, the vice president of administration and your operating peers in the eye and say, "This is the value that I uniquely, as the corporate CIO, bring to this organization," and that conversation is comfortable, then I think you've got the right balance.

Rindels: So you ask, "Where do you spend your time? What job are you in?" Your title doesn't matter; just see where you spend your day, and that's the job that you have.

Fishburn: Right. If the organization sees you spending 90 percent of your time on the infrastructure, then you're the infrastructure CIO. You need to articulate your value in business terms. People don't care that you put in SAP; what they care about is what





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business benefit you derived from putting in SAP. Did you improve the inventory turnover? Did you improve the cost structure? Did you get the revenue going? Have you made the organization better to communicate with? What exactly did you do to help the shareholders, the customers and the employees?

Rindels: When I started here, I requested that I report to the CEO/president. Since the restructuring, I'm reporting to the senior VP of new ventures and corporate services. The change has had minimal impact on my ability to lead through this period. But is this the best reporting structure for the organization and what we need to accomplish?

Fishburn: You need to report to somebody who understands the value of IT to the organization. There are situations where reporting to the CEO or the COO is not the right answer because they're not working in their day-to-day jobs on the things that you're working on. You get a reporting relationship, but you're not getting any help.

Clearly, working for somebody who views the IT organization as a cost, or purely as a staff function, is a death knell. And that's why people always make negative comments about reporting to CFOs. Having been there myself, I know that there are some CFOs who don't get it. Where the company lands is highly dependent upon the view it has of you and the

you. If you have an hour with senior management, you could spend 30 minutes of it talking about the cost of the IT organization, 25 minutes talking about technology and 5 minutes talking about business benefits. However, if you decide to spend 50 minutes talking about the business benefits you're working on with the operational people, it's a different conversation. People see you by how you communicate.

Rindels: I think what I'm hearing overall is that in a changing business environment like ours, you have to be in tune with your business peers and leaders who are not technologists. They are guiding the organization through restructuring, and I need to

value your IT organization will bring to Respironics.

Three Weeks Later

Rindels: The stock's up \$2 since we last talked, so we're doing a little better. I spent time with the presidents of two of our major divisions to talk about ways for IT to participate in discussions at a business level. It will happen first through our existing meeting structures. All the key people will be at or conferenced into a meeting location; it's a more dynamic way to interact with each other. As we become accustomed to this, we'll be more relaxed with each other, and I'll be accepted in their environment and their existing framework.

Fishburn: The subtle aspect of a company doing better should never be underestimated. Good news creates a halo effect, which allows good things to happen. The fact that you and others from IT are in these meetings is encouraging. You need to create face time. In these meetings, you may hear things that indicate that the success measures for the business strategy are changing. If so, the processes necessary to address those measures will need to change, and then the IT to support those processes will change. As you hear the discussions, think through that sort of thing and ask questions like, "How do we know we're successful? How do we define success?" Our IT people find that to be a good way to work their way into discussions. **CIO**

MENTOR CHECKUP

Four months ago, John R., director of IT at a Wall Street hedge fund company in New York City, was caught in a whirlwind of customer support demands, looming project deadlines and bosses who pulled him in every direction at once. He talked with Robert Barrett, vice president of IT at PRI Automation, about how to cut through the chaos and make time to manage his nascent IT department and lead his company (see "Virtual Mentor," *CIO*, Jan. 15, 2000). John reports that he's managed to extricate himself from much of the entanglement, ace his project deadlines (though some of his peers would argue that point) and wrangle control of a new IT budget that could put an end to the executive tug of war. Read more about his progress and his original discussion with Barrett at www.cio.com/printlinks.

"People don't care that you put in SAP; what they care about is what business benefit you derived from putting in SAP."

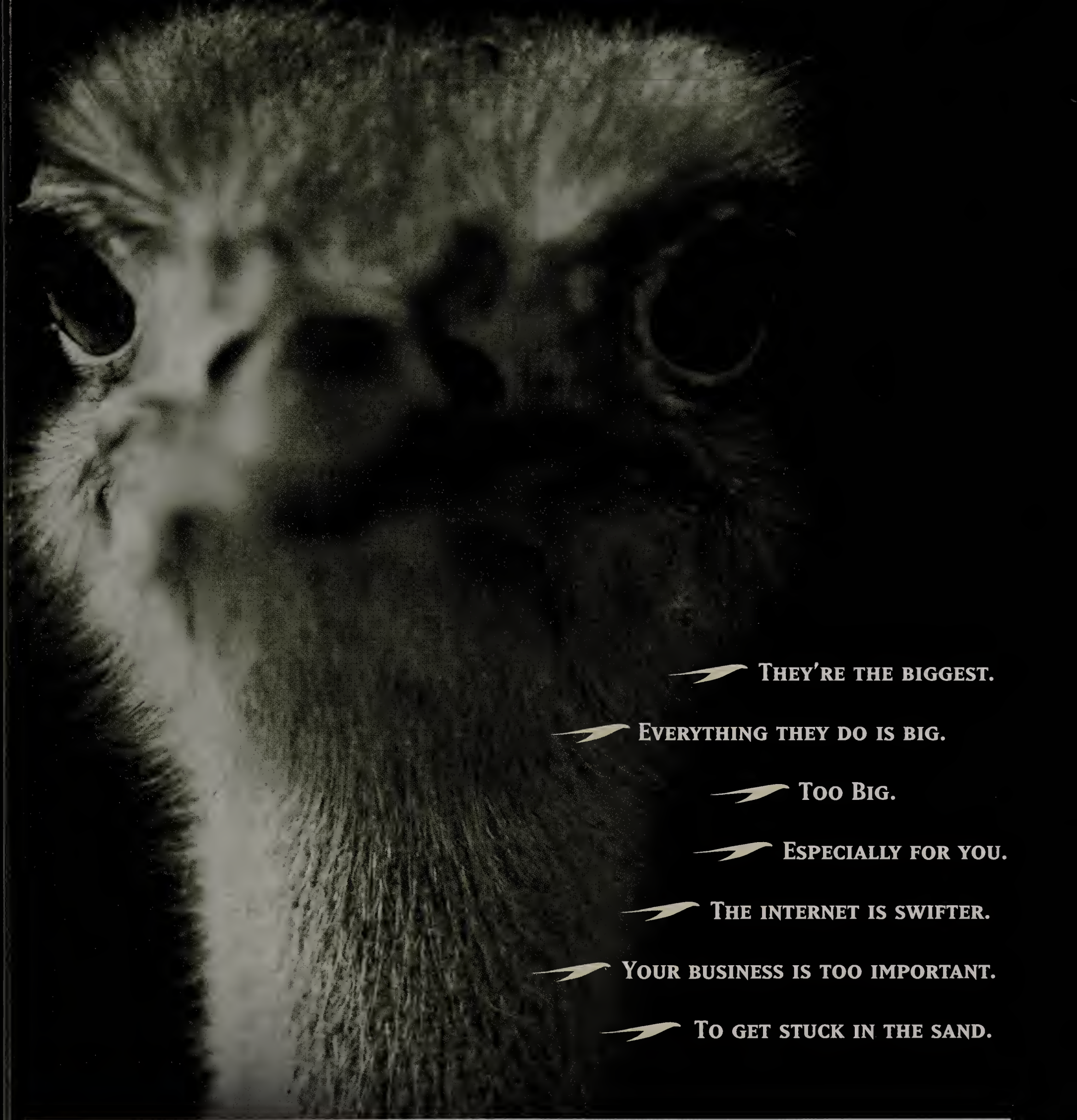
—RICHARD FISHBURN

IT organization. If the company views you as an agent of change working with operations to improve the competitiveness of its business processes, then I'm going to guess your reporting relationship will work its way out over a period of time.

You control how the organization views

understand that and apply what I know as a technologist. Then I'll be able to have a greater impact. However, fundamentally there's got to be a mutual and shared understanding about the direction of the business.

Fishburn: That understanding will take you a long way toward optimizing the



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YOU KNOW WHAT THEY DID LAST NIGHT

Your company knows all there is to know about its customers' preferences and patterns, but do your customers want you to be looking over their shoulders? BY DAINTRY DUFFY

Some may call Larry Ponemon a privacy expert or even a guru, but when it comes to having his privacy violated, he's no different from the rest of us.

In 1995, when he first heard about an ethnographic database of families being built by a Jewish organization, it seemed like an excellent idea. The organization planned to use the amassed data to reunite families who had moved or changed their names after the Holocaust. Ponemon, the global leader of compliance risk management for PricewaterhouseCoopers (PWC), was so intrigued by the project that he signed up, pro-

Discover

- Why privacy is becoming a hot-button issue
- How giving customers a choice can mitigate privacy concerns
- Why 2000 may be the year for sweeping privacy legislation

ILLUSTRATION BY PETER HORVATH



viding the group with some demographic information about his family in the process.

In 1998, two-and-a-half years later, Ponemon's company was brought in to conduct an audit of the information trail behind a direct marketing company's database. Ponemon's interest in the case quickly became personal. After some investigating, he discovered that the organization he gave his information to had sold its database to a direct marketing group to raise money. That company had then integrated the database with its own information, and the compiled information had been bought, added to and sold on at least 10 times after it left the marketer's hands. The final destination of the database, which by then included detailed information about Ponemon's family, credit and occupational history, and that of thousands more, was a neo-Nazi group in Idaho.

The privacy issue is not new by any means. CIOs have been working on it and the press has been writing about it for several years (see "Saving Private Data," *CIO Web Business*, Oct. 1, 1998). However, for any company with a web presence, privacy is becoming infinitely more worrisome. Highly publicized security breaches like the CD Universe attack (where a hacker posted 25,000 of the online music retailer's customers' credit card numbers on the internet) are alerting corporate executives and consumers to the realization that in the online world, nothing is airtight.

Like security, privacy has grown into much more than a technical issue—it's a brand issue. Companies that can't protect or don't respect their customers' information are going to pay a heavy price. Not only will they lose customers, but industry experts like Ponemon predict a huge opportunity for class-action lawsuits stemming from privacy violations.

Ensuring privacy in the brave new world of hack attacks, perpetual marketing and information mining presents government and industry with an enormous challenge. However, everyone has a different idea of how the issue should be handled. Consumers want control of their own information, and industry

wants to establish itself as the consumer's trusted partner in information privacy rather than the natural enemy. Government, the last leg of the stool, wants to protect consumers from industry and industries from each other while maintaining its own personal key to everyone's information. Clearly one solution will not fit all.

This year promises to be a year of big changes in the privacy arena, and it's vital that CIOs pay attention to the forces shaping the way privacy is

handled long-term. The means and opportunity to violate privacy for profit are boundless, and CIOs (to whom much of the privacy responsibility falls) are armed with only a smatter-

Find Out More...

For more news and information on tackling privacy issues, certification authorities and industry groups are a great resource. For links to many related sites, visit the online version of this article at www.cio.com/printlinks.

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The Year in Violations

It's been a busy year for privacy infringements

Consumers and the FTC have little patience for the antics of companies that play fast and loose with the privacy of customer information. Examples of new violations are hitting the mainstream press daily, and proponents of self-regulation fear that the more publicity these situations get, the more inclined Congress will be to act. What follows are some of the most notorious cases from the past year.

Intel's Pentium III Chip Each of Intel's Pentium III computer chips contains a unique electronic personal serial number that can be tracked over the internet and possibly through e-commerce transactions. Privacy groups have protested, but the ID remains and the

chip may soon be banned in Europe, which has stricter privacy policies.

ReverseAuction.com versus eBay Online auction house ReverseAuction.com apparently pulled a switch on consumers when it allegedly collected consumers' personal information from competitor eBay, then sent e-mails to those consumers soliciting their business.

Interloc versus Amazon.com Interloc, an online bookseller and internet service provider in Greenfield, Mass., was accused of intercepting e-mail messages directed by online bookseller Amazon.com to Interloc's bookseller clients with Interloc e-mail addresses.

The company was accused of trying to steal business strategies from its behemoth competitor. Alibris, the new owner of Interloc, has settled the case.

Liberty Financial The FTC brought suit against Liberty Financial Companies, a Boston-based asset management company, for violating the privacy rights of children who frequented its Young Investor website. The FTC alleged that the company had used prizes and contests to encourage children to disclose their names and addresses, as well as information such as stock holdings and the amount of weekly allowances that could be used to market to their parents.

—D. Duffy

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ing of tools and services to protect it. The pressure is mounting for the government to legislate privacy, corporations are struggling to lay out best practices for making self-regulation work, and technology innovations are being developed that hold promise for allaying consumer fears. CIOs will have to keep a watchful eye on the following areas this year to determine the best way to lead their companies through the murky waters ahead, ensuring that their companies are protected and their interests will prevail.

Will Government Act?

The debate over whether industry will be able to regulate privacy or whether the government will need to step in and mandate how it should be handled is likely to be decided this year. Businesses and trade organizations have long been pushing for self-regulation fearing that government rules would quash the growth of e-commerce. Privacy fundamentalists and various politicians, however, see rigid privacy legislation as a necessity.

The legislation that has been passed on privacy to date has been fairly limited, affecting only certain industries and consumer segments. The Financial Services Modernization Act of 1999, for example, requires that financial institutions notify their customers of plans to share "nonpublic" information

collecting, using or disclosing personal information of children under 13. In some cases, sites will also have to obtain "verifiable parental consent" before collecting, using or disclosing personal information of children.

Much of the pressure for further legislation is coming in reaction to The European Union Data Directive adopted by the EU in October 1998 (see "The Great Wall of Europe," *CIO Enterprise*, Feb. 15, 1998). The directive establishes a high level of legal protection for the privacy of individuals and personal data within the EU. The stickiest issue for U.S. companies is that the directive further mandates that personal data can be transferred to countries outside the EU only when adequate security is guaranteed. Because the United States does not have an umbrella privacy policy, the EU could choose to stop the transfer of all data until a compromise is reached.

Federal Trade Commission Commissioner Orson Swindle has long believed that self-regulation is the best long-term solution for handling privacy. However, he fears that unless industry can show that it has made significant strides to protect consumers, government will be forced to do it—and will do it wrong. "Perhaps the greatest of all mistakes would be to see government succumb to the feeling that we have to do something," he says, "and then we do something that puts the brakes on e-commerce."

Businesses have a degree of incentive and creativity in this area that the government will never have. Recognizing this, the FTC is working with businesses to respond to consumer privacy concerns in a way that respects an individual's right to privacy without placing excessively onerous regulations on the business community.

Companies that can't **protect** or don't respect their customers' **information** are going to pay a **heavy** price. Not only will they **lose** customers, but industry experts predict a **huge** opportunity for class-action lawsuits stemming from privacy violations.



with a third party so that they have an opportunity to voice opposition. The privacy standards contained within The Health Insurance Portability and Accountability Act (HIPAA) went into effect earlier this year. The act mandates that health-care providers and

hospitals protect the confidentiality of an individual's health information with accountability and security requirements like the implementation of electronic data interchange standards. The Children's Online Privacy Protection Act of 1998 (COPPA), which becomes effective this month, requires certain commercial websites to obtain parental consent before

Swindle points to IBM and Disney as examples of self-regulation at its best, noting that both companies have been active in public discussions of how privacy should be handled and are deft at handling the issue within their own corporate structures. Both do a great deal of advertising on other websites and have put out the word that any site they advertise on had better have an ironclad privacy policy. Few things get the message across as effectively as money. Both companies, along with others such as AOL, Intel and Fidelity Investments, have been working with government groups like the FTC's Advisory Committee on Online Access and Security. The best way for companies to ensure that their voices are heard in the evolution of any privacy legislation is to get involved in either government or industry-sponsored organizations like the Online Privacy Alliance.

Privacy is an emotional issue, however, and Swindle acknowledges reluctantly that the best practices of a few industry lead-



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ers may carry less weight with politicians than the outrage of consumers. "As soon as 34 people send you a letter, you've got an issue," jokes Swindle, recounting an old Washington truism. The FTC will be conducting its third survey this year on how commercial websites are dealing with privacy, looking specifically at whether sites are posting notices that address all the elements of fair information practices (disclosure, choice, access, security and consumer redress). Adding to the importance of this year's findings will be the inevitable vote pandering of

an election year and the number of advocacy groups that will be looking to interpret the results as a resounding endorsement for their own views.

Though he is loathe to dole out advice, Swindle suggests that the best

offering customers the opportunity to opt out of certain services alleviates a number of privacy concerns.

The company's *54 service in New Jersey, Virginia and West Virginia, for example, puts a caller in touch with a "reverse" directory assistance operator. Callers give the phone number, and directory assistance will provide the name and address that goes along with the number, as long as the number is listed in the phone book. Realizing that some customers might consider this an invasion of privacy, the company offered its customers the option of being excluded from this listing.

In addition, the company has also branched out from the legally required "do not call list"—which allows consumers to take their names off marketing lists—to offer customers the ability to remove their names from mail lists and e-mail lists as well. The company feels that giving customers the opportunity to customize, in a sense, the kind of relationship they will have with the company enhances its image as a trustworthy and valuable service provider.

Opt-in options, however, are a little trickier. "Most people don't have the time or incentive to opt in to a program unless they really want something," says Shelly Harms, executive director of public policy for Bell Atlantic. But the company is looking for more ways to integrate opt-in opportunities into its marketing schema because studies show that consumers do appreciate the personalized service they get when they provide even

a little information about themselves. This model translates well to companies in the business-to-business arena as well. Customers can sign up for notification of pricing policy changes and other information that creates a more valuable relationship between themselves and companies.

A 1999 study conducted by *Privacy & American Business*, a privacy-oriented research journal, and its publisher, Alan F. Westin, underscores the importance of offering consumers the right product. Westin, a professor of public law and government at Columbia University, found that of the 474 internet users surveyed, 58 percent would agree to have their visits to websites tracked for the purpose of receiving personalized banner ads reflecting their preferences. Fifty-one percent of the users said they would agree to have their online purchase information monitored to get the personalized banner ads as long as they were notified and had the opportunity to opt out.

Companies that look into offering consumers incentives to participate in the marketing process will be able to sidestep one of the biggest problems of the privacy debate: the amount of incorrect information that is circulated. Approximately 40 percent of the information currently submitted and collected from the internet is intentionally inaccurate (meaning that cus-



The means and opportunity to **violate** privacy for profit are **boundless**, and CIOs are armed with only a smattering of **tools** and services to protect it.

way for companies to stay ahead of any privacy legislation is to make sure that privacy becomes a goal not only of individual departments but of the corporation as a whole. "CEOs need to make privacy a corporate goal," he says, adding that they need to make privacy a fundamental piece of the culture and put it on the same level as profitability. "They have every incentive in the world to do it because it creates a satisfied customer."

Provide Customers a Choice

The overwhelming concerns surrounding privacy have convinced many companies that an aggressive policy of privacy rigor is the only way to handle the issue (see "The Business Case for Privacy," *CIO Enterprise*, March 15, 1998). Permission marketing, the technique of giving customers the choice to opt in to a marketing program, is becoming increasingly popular because it not only provides customers protection from unsolicited marketing, it also allows companies to market products to a much more valuable segment of the population—the ones who care.

The first step to giving customers a choice is providing an opt-out option. Consumers are increasingly aggravated by the amount of marketing they are subjected to, and New York City-based Bell Atlantic Telecommunications has found that

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tomers provided companies with inaccurate information), according to Bob Lewin, CEO and executive director of TRUSTe, an organization that offers privacy certification and policing services. PWC's Ponemon has conducted privacy audits at companies in a variety of data-intensive industries and has seen firsthand how inaccurate some of the data can be.

One of his clients, a large credit card issuer, bought a great deal of information from other sources and used various algorithms to parse the information and develop a list of buying patterns and preferences. The FTC hired Ponemon's group to do an audit, and when he looked up his own information in the files, both the level of detail and the scope of the inaccuracies amazed him. From studying his purchases and buying patterns, the credit card company knew that Ponemon liked brown shoes better than black shoes (a proclivity he readily admits to) and that his preferences for movies ran to the Disney variety (which he buys for his children). Nestled amidst this detailed

issue by weighing the value provided when they offer their information with the potential privacy risks, and pick and choose accordingly.

Although technology has certainly added considerably to the privacy problem, it may also provide the best hope for a long-term solution. A screening technology called the Platform for Privacy Preferences (P3P) may eventually allow consumers to tailor their online experiences to their own preferences. P3P can be built into browsers to shield users from sites that don't provide the level of privacy protection they want. Instead of forcing users to sift through the privacy policy for each site they visit, the computer will download the privacy policy from each site and notify users if the policy does not match their preferences.

P3P may sound like a long shot, but the caliber of companies throwing their weight behind the initiative make this dark horse look like a sure thing. The platform is being developed by the World Wide Web Consortium (W3C), an international industry group with member companies like Apple, Commerce One, Ericsson and Microsoft, and may be approved for general implementation by the end of 2000.

IBM is also supporting P3P.

In his experience with the FTC, Commissioner Swindle also sees promise in a variety of other technology proposals, such as having an "honest broker," which would basically be a trusted third party through which all online transactions would go, eliminating many of consumers' concerns about the privacy of their information. He also points to an electronic

passport that allows a user to prove his or her identity. Users who visit websites with digital certification can submit credit card numbers or other personal information knowing the site is genuine and their data cannot be intercepted or used by anyone else.

As additional privacy legislation is proposed and regulatory issues unfold, companies should be prepared to tackle privacy issues head-on.

"Even with the best of intentions, companies have a hard time [protecting privacy]," says Ponemon, "because the ability to violate privacy is always a couple of miles ahead." But the risks make this challenge well worthwhile. In this area, one bad deed wipes out 10 good ones. A breach in security or privacy is a corporate nightmare and a career killer. **CIO**

Do you know of corporate invasions of privacy? Senior Writer Daintry Duffy would like to hear about it. Write to her at dduffy@cio.com.

"Perhaps the greatest of all **mistakes** would be to see government **succumb** to the feeling that we have to do something, and then we do something that puts the brakes on **e-commerce**." —Orson Swindle, FTC Commissioner

information were some glaring inaccuracies that could have easily been verified from public information sources, such as the "fact" that Ponemon was a graduate of the University of Kansas. (He is actually a Harvard grad.)

A 1996 study that Westin conducted in conjunction with Equifax and Louis Harris Associates is considered a classic by many privacy advocates, even four years after it was done. The study divided American online consumers into three groups. Of the 1,005 adult consumers surveyed, 24 percent are considered to be "privacy fundamentalists"—those who don't want anyone to have access to their personal information—while 16 percent are "privacy unconcerned" and will willingly give out information when asked. Westin's study determined that the remaining 60 percent of consumers are "privacy pragmatists," individuals who approach the



See Page 198 for a sample excerpted privacy policy statement



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A Matter of Policy

A privacy policy is the foundation on which every company's privacy strategy is built as well as the means by which it is communicated to customers and business partners. The following is an excerpted sample policy provided by TRUSTe, an organization that helps companies formulate and administrate effective policies. Included are comments from Bob Lewin, CEO and executive director of TRUSTe. For more comprehensive information on building privacy policies, visit www.truste.org.

The privacy statement should include what security mechanisms are in place both online and offline to protect the data collected.

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4. With whom the information may be shared
5. What choices are available to you regarding collection, use and distribution of the information
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7. How you can correct any inaccuracies in the information

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LOG FILES We use IP addresses to administer the site, track user movement and gather demographic information for aggregate use. IP addresses are not linked to identifiable information.

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LINKS This website contains links to other sites. We are not responsible for the privacy practices of other sites. Read the privacy statements of each website that collects identifiable information.

SECURITY This website takes every precaution to protect users' information. When users submit sensitive information via the website, their information is protected both online and offline. When our registration/order form asks users to enter sensitive information (such as credit card number and/or Social Security number), that information is encrypted and is protected with the best encryption software in the industry-SSL. While we use SSL encryption to protect sensitive information online, we also protect user information offline.

SUPPLEMENTATION OF INFORMATION To properly fulfill our obligation to customers, we supplement the information we receive with information from third-party sources. For example, to determine if our customers qualify for one of our credit cards, we use their name and Social Security numbers to request credit reports. Once we do that, this document is destroyed.

CORRECTION/UPDATING PERSONAL INFORMATION If a user's personally identifiable information changes (such as a ZIP code), or if a user no longer desires our service, we will provide a way to correct, update or remove that user's personal data.

CHOICE/OPT-OUT Our users are given the opportunity to opt out of having their information used for purposes not directly related to our site at the point where we ask for the information.

The most basic element of a valid statement is disclosure of what personally identifiable information is collected and with whom it is shared.

The disclosure of who is collecting and who owns the data is a user's first method of identifying how to resolve his or her complaints.

As most website business models include the sharing of services and customer information, disclosure of these relationships is a must.

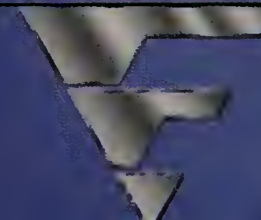
This gives the user the ability to prevent the sharing, renting or dissemination of their personal information with third parties.

Users need reasonable access to correct any inaccuracies in their profile information. Many companies will provide a contact name/e-mail/phone number.

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Inside

new products
..... 202

revisit
CASE 208

predictions
B-to-B services ... 212

under
development
new batteries 214



The Unwired Planet

Small pipes, spotty networks and diverse devices bedevil developers of wireless applications BY MEGAN SANTOSUS

AS CIO, you're charged with extending corporate applications to wireless devices. A simple mandate, but the situation gets considerably cloudier on closer inspection. Sales wants contact management and e-mail capabilities rolled out to remote salespeople toting smart pagers.

Business development wants to provide suppliers with wireless procurement applications, and there's no way for you to control whether those suppliers use web-enabled phones or personal digital assistants (PDAs). Meanwhile, marketing is looking to give consumers applications for

*Edited by Sari Kalin.
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ideas for future columns
to et@cio.com.*

XML meets EDI...buzzwords...private screens...machine translation

Can IT Managers Be Heroes?

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ordering products from the company website—applications that have to work equally well whether those consumers use a smart phone, personal organizer or handheld PC.

As the internet explodes and wireless devices proliferate, so does the attraction of building and extending applications to a mobile workforce, remote customers and disparate suppliers. Yet building applications for the legions of mobile users often requires more than simply hammering out code.

For one thing, the wireless devices used by a target audience can vary widely. With different operating systems, screen size, memory, security features and performance, building an application that has

BUZZ WORDS

FOILWARE

A product that exists only on a marketing rep's PowerPoint presentation

we have to fit the best information we possibly can in a small pipe." Weather.com has partnered with a number of wireless vendors, including Palm Computing, Phone.com and Sprint PCS, to offer customers wireless web interaction to basic weather information. In developing the Sprint PCS applica-

tion, the biggest issue was learning new technology. "We created that in HDML [handheld device markup language], which for us was a new programming environment," Flournoy says.

The Power of WAP

Like Flournoy, other developers need to think about implementing wireless applications today even while the technology

"We have to fit the best information we possibly can in a small pipe."

—Tom Flournoy, director of wireless business development, Weather.com

universal functionality is a challenge. Then there are the various networking and telecommunications issues, including coverage area and service availability. "Any software or application that is developed for wireless is only one part of the equation," says Jane Zweig, executive vice president of Herschel Shosteck Associates, a Wheaton, Md.-based wireless telecommunications consulting company. "Companies need to think about the handheld terminals as well as network services, coverage, reliability and quality."

Tom Flournoy, director of wireless business development for Weather.com in Atlanta, echoes Zweig's assessment. "The issues don't surround the development tools; they have more to do with the network, bandwidth and cost at the wireless carrier level," Flournoy says. "We have data we can give to customers today, but

landscape is still unsettled. Atypical of other emerging IT developments, there is actually some consensus evolving around wireless technology. The wireless application protocol (WAP), a de facto standard that allows mobile devices to access the internet, is driving much of the activity in wireless application development. With WAP-enabled devices equipped with browsers, remote users view website content in the wireless markup language, a flavor of XML used to present data on wireless devices. The WML format offers developers more heft than HDML, a format that is primarily used to present web-based content on devices such as pagers and phones with small displays, low bandwidth and limited power. (For more information on the WAP specification, visit the WAP Forum website at www.wapforum.com/index.htm.) The emerging WAP standard,

new products

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Finding a handy place to store your cell phone, PDA, pager and your other gadgets has been a problem, right?

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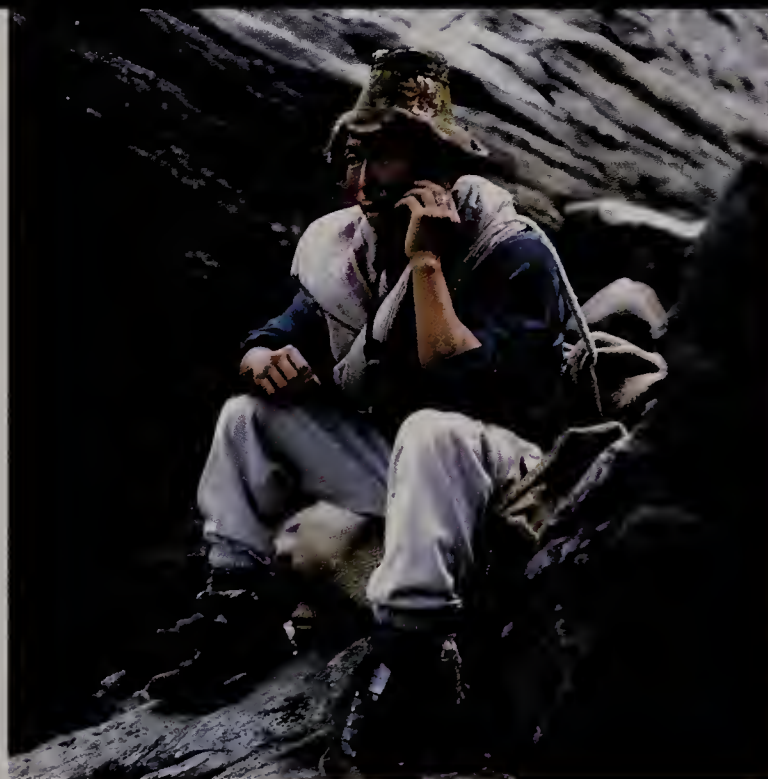
Priced at \$59.99, eHolster comes in a basic black neoprene version. The leather version costs \$99.99. Both come with two e-Pouches, one that can hold a Palm computer



or other PDA, the other designed to hold a mobile phone; a pager can also be clipped to the holster. E-Pouches for other devices will be released every quarter. For more information, visit www.eholster.com or call 888 425-1034.

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Innovating the HP Way

coupled with increasingly powerful handheld devices and a growing reliance on the internet, translates into plenty of opportunity for developers who want to build anywhere/anytime applications.

Amazon.com plans to offer wireless services to an ever-changing group of consumers and devices. In October 1999, the online retailer launched Amazon.com Anywhere, a wireless shopping application that runs on the Palm VII organizer. Just like on the Amazon.com website, shoppers can search for merchandise, read reviews (albeit truncated versions) and make purchases with the Palm device or Sprint PCS phones. Amazon.com developed the application using tools available from Palm's website.

BUZZ WORDS

M-COMMERCE

Mobile commerce, that is, e-commerce conducted via mobile devices

companies should follow the Seattle-based company's philosophy. "WAP is a huge force that's going to drive wireless," he says. "The software technology to build applications will follow quickly." Many vendors, including IBM, Oracle, Lotus and Nokia among others, offer tools for develop-

ing wireless applications that can access the web, link to corporate databases, and send and receive e-mail. In several cases, development tools are available free from vendors' websites.

Despite progress in web-enabled standards, there are still reasons why companies roll out wireless applications that don't tap into the internet. David Balaban, senior vice president at Energy Amer-

For people who are perplexed by all the options out there, signing on with an application service provider may be the answer.

While deciding which information to present on a small screen required some thought, "The hard issue," says Nayeem Islam, Amazon.com Anywhere's director of engineering, "is making sure that whatever application you build, you're ready for the different devices that are out there." To prepare for future devices, Amazon.com acquired Convergence Corp. in exchange for equity, a strategy that admittedly isn't practical for every company. Convergence offers software that provides internet access to a host of information appliances. Although Islam wouldn't get specific about future applications, Amazon.com Anywhere has teamed up with wireless vendors Motorola and AvantGo.

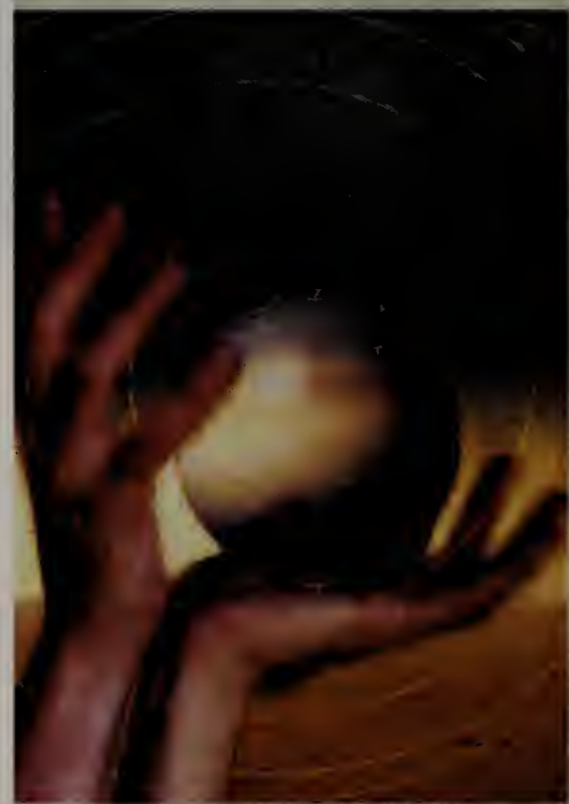
Amazon.com is certainly aggressive in the wireless space, and Islam thinks other

ica, a marketer of natural gas and electricity in Stamford, Conn., wanted to equip door-to-door sales agents with a convenient device to collect basic customer information and transmit it to a third-party verification company. Balaban spent a couple of hours on the web looking for a device that could be stripped of all functionality and loaded with a custom application. "We wanted a very user-friendly device so our agents in the field couldn't make mistakes," Balaban says. By limiting the available wireless applications to one, Energy America ensured both control and security. After a couple of hours searching on the web, Balaban selected the RIM Interactive Pager 950 from Research In Motion in Waterloo, Ontario.

new products

Crystal Balling

To avoid embarrassing site outages and snafus, fast-growing e-businesses need to make sure their server farms grow as fast as their businesses. A new product offered by **Clairvoyant Software** aims to help e-commerce sites predict when their CPUs, memory or storage will be maxed out so that they can plan capacity upgrades. **ForeCAST Resource Manager for E-Commerce** polls the site's servers every 30 seconds, collecting site access data that it uses to calculate its predictions; a year's worth of data can be stored in 1MB to 2MB of space. Targeted at ASPs, web hosting companies or companies that host their own e-commerce sites, the product has a



Laurie lowered her insurance rates by visiting her company's Intranet site.



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Once Balaban selected the device, he opted for the BellSouth Powertool application development environment from BellSouth Wireless Data. Programmers at BellSouth initially developed the application in eight weeks; currently, developers at Energy America maintain the application. The Powertool environment generates C code, so in-house developers don't have to learn a mobile programming language. Both data collected by sales reps

February, Sephora.com, the company's website, launched a wireless application that lets consumers purchase gifts using a mobile device. "We wanted to provide a service that supports a number of different devices without us having to do a lot of programming," Lucas explains.

Sephora.com outsourced development to Ajaxo, a Cupertino, Calif.-based provider of wireless data systems. Using its Smart Agent development environment,

There is actually some consensus evolving around wireless technology.

and application updates are transmitted via BellSouth's wireless network.

Mark LaRosa, CIO of Dynamic Mobile Data, a wireless products and services company in Somerset, N.J., sees limitations to web-based wireless applications given the current state of technology. "One of the problems with browser technology is that it breaks down," he says. "If users don't have access to the LAN, they don't have access to the application." For getting updated information or even buying consumer goods, that's fine. But for applications that LaRosa deems more critical, such as dispatch or field service, he recommends going with a device that has some sort of local storage.

Outsourcing Development

For people who are just too perplexed by all the options out there, signing on with an application service provider (ASP) may be the answer. There is also a growing community of ASPs that will build and host web-enabled wireless applications for customers. Ted Lucas, CTO of Sephora, a San Francisco-based beauty products retailer, opted to outsource development of a wireless shopping application in part because the terrain is so uncharted. In

Ajaxo converted Sephora's gift webpages for display on WAP-enabled phones. Mobile consumers can now connect to some of Sephora's webpages, search for specific items by product code or name and buy them—without setting foot near a desktop machine.

With wireless technology still emerging, Lucas doesn't want to invest the time and energy to create development efforts in-house, although he's not ruling out that option in the future. "Right now [wireless] is an early adopter market that's going to be expanding," Lucas says. "We wanted to establish a footprint on the market without having to make a significant change to our website."

Raymond Tam, CEO of Infocast, a Hong Kong-based provider of online trading systems using intranet, internet and wireless channels for retail brokerages and investors, also signed on with Ajaxo for application development. Of most concern to Tam are speed and flexibility. As Infocast licenses its trading system to brokers, new applications have to be up and running fast. By outsourcing development, Infocast doesn't need to maintain a large staff of developers. And because the Smart Agent environment relies on object- and Java-based architecture, Infocast doesn't have

new products

starting price of \$10,000 per license. Clairvoyant also offers **ForeCAST Resource Manager for Internet Access**, aimed at the ISP market; pricing starts at \$5,000 per license. For more information, visit www.clairvoyantsoftware.com or call 408 861-1110.

Private Screening

To keep prying eyes from catching a glimpse of an employee's computer screen, **Optical Coating Laboratory** has released a line of screen filters that make a computer screen look blurry to anyone viewing it from an angle greater than 38 degrees on either side of the user. The **GlareGuard PrivacyMax** filters also reduce screen glare. Estimated retail pricing is \$149 for a filter that fits a 14-inch to 15-inch monitor, \$189 for one that fits a 17-inch monitor and \$259 for one that fits a 19-inch to 21-inch monitor. For more information, visit www.glareguard.com or call 800 545-6254.

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to do any tweaking to its website in order to accommodate different devices. This is particularly important in Hong Kong, says Tam, because the only mobile phone currently available is a model from Nokia. Soon, Ericsson and Motorola are expected to enter the market, and Tam wants to be ready to offer Infocast's trading system to users of those devices. By using an ASP, Tam says Infocast can have an application developed in as few as three days.

Opting for an ASP with expertise in wireless development is a viable strategy right now for internet-based applications, especially for companies that plan to roll out functionality slowly. "When delivering services on the intranet, a company is generally not looking to differentiate the offering," says Dan Whaley, cofounder and CTO of GetThere.com, a provider of online travel applications based in Menlo Park, Calif. For wireless applications aimed at an internal audience, Whaley sees less of a need for customization. As the lines between intranets and extranets blur, however, more application customization is typically in order because users often have different devices and different needs. For Sephora's Lucas, being able to quickly adapt to a changing and diverse group of users was a major factor in his decision to go with an outsourcer.

Although including wireless applications in an IT infrastructure seems like a hassle now, CIOs need to deal with it. According to Framingham, Mass.-based market researcher IDC (a sister company of CIO), the market for internet-based information appliances—including smart handheld devices—will grow to \$17.8 billion in 2004, an increase from \$2.4 billion in 1999. The number of remote and mobile device users in the United States alone will reach 47.1 million by 2003, up from 35.7 million in 1999. With all those people roaming free, the audience for wireless applications will be huge.

Senior Editor Megan Santosus can be reached at santosus@cio.com.



REVISIT CASE

CASE Closed?

Culture clashes put the kibosh on computer-aided software engineering **BY FRED HAPGOOD**

ONE OF THE out-of-the-park homers hit by computer technology in the '70s was a metalworking support technique called CAD/CAM, for computer-aided design/computer-aided manufacturing. CAD allowed a person to design a metal part on a computer and send it to an appropriate forming tool, like a lathe. The lathe would then make the part automatically. No floor operator in the conventional sense was needed.

This model struck a chord with the whole business world, and during the '80s products started to appear that claimed to be the equivalent for programming. Computer-aided software engineering, or CASE, represented itself as an interface that would allow someone, not necessarily even a programmer, to design a program by drawing its logical structure—what to do, in what order and how—out on a screen. Only when the logical structure was finished did production of the actual

code begin, perhaps by the tool itself or by an overseas programmer.

CASE vendors claimed several virtues followed from separating design and analysis from actual code production. Design and programming errors were minimized. Programs were easier to change and maintain. Perhaps most important, CASE would allow management to understand programming projects for the first time, since all they would need to do is learn to read the graphics depicting the structure.

Up until then software projects had been relatively opaque to nontechnical supervisors and therefore frustrating to manage. (Manager: When will the project be due? Programmer: That depends. M: On what? P: Technical issues. M: Why wasn't it finished on schedule? P: Technical problems. M: Could you add this feature? P: No. M: Why? P: Technical reasons.) Programmers seemed to live on the other side of a one-way window. They could see

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out, but managers could never see in. George Cagliuso, interim president and founder of Visible Systems in Waltham, Mass., one of the first CASE companies, says he gave his company that name for precisely this reason: to assure managers that the product would allow them to look over the shoulder of their programmers.

CIO ran two articles on CASE in 1990. The first claimed that the case for the new technology was won. "Today the question in the minds of IS executives isn't whether to implement CASE, but how to do it," we said, adding, "CIOs who ignore the need to formalize the systems-development

design, maintenance and documentation. But now the software industry runs on internet time and people want to get stuff out as quickly as possible. If it needs fixing they will fix it later." He thinks CASE still has a niche—indeed, it is essential—in the design of very large systems.

Still a third theory is advanced by Charles Connell, an instructor in computer science at Boston University. CASE products, he points out, were actually a bundle of tools, including source control systems (which allowed many people to work on a project at the same time), compilers, build tools, testing tools, performance

analyzers and others. Some of these tools performed well and some didn't. The poor performance of the ones that didn't dragged down the whole package.

Over the last decade the routines that worked have migrated out from under the CASE umbrella into other programming tools and suites, such as Microsoft's Visual Studio, while interest has faded in the pieces that never performed well. In Connell's view, CASE did not die; it just got reorganized. Connell also points out that many of the most important benefits of CASE—error reduction and ease of maintenance—came about indirectly, from the growing trend of building and reusing software components, objects and modules.

The difference is that objects and modules came up from the floor, from out of the hands of the practicing programming community, as opposed to being imposed from above. They did not threaten the community that was supposed to work with them. That purely political advantage may have made all the difference in the comparative success of the two technologies.

Send ideas for technology revisits to et@cio.com. Fred Hapgood is a freelance writer in Boston. He can be reached at hapgood@pobox.com.

"CASE is like using an architect to build a house."

—Vince Peterson, president, Structured Technology Group

process...do so at their peril, and at the peril of the organizations they serve." The second hedged our bets; we warned that CASE faced huge acceptance problems from the programming community, who were being asked to make radical changes in their working style in order to tighten management control over their jobs and potentially ease their own replacement.

For whatever reason, CASE ended up putting down few enduring roots. Some think the emphasis on top-down, front-end planning ran against the grain of American culture. "CASE is like using an architect to build a house," says Vince Peterson, president of Structured Technology Group in Saugus, Mass., a CASE vendor. "You do the thinking first. Our tradition is to dive in and start doing it." He says European cultures are in general more attuned to CASE and its methods.

Shang Chyou, manager of Structsoft Inc., a business software design company, believes that CASE fell victim to a change in the culture of the computing. "In the old days software was produced for defense contractors and big corporations," he says. "Customers like that worried about

new products

Chatty Cathy

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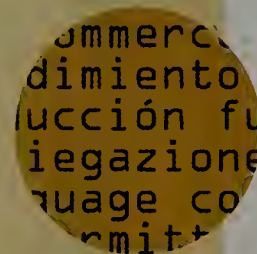
Enterprise Translation Server 3.0 can translate plain text, documents and webpages (webpage translation is a bit slower than plain text translation, since the

server must first strip out the HTML); it can be integrated with existing e-mail systems and other corporate applications as well as with intranets and websites.

The server can translate from English to Spanish, French, German, Italian and Portuguese, as well as from Spanish, French and German to English. Pricing starts at roughly \$17,000; the price varies depending on the number of languages supported and the amount of material to be translated. For more information, visit www.transparent.com or call 800 752-1767.

XML-X'ing

There's been a lot of buzz around extensible markup language (XML), the web data-sharing standard that looks to be the foundation of future business-to-business e-commerce. But companies seeking to add XML to their e-commerce technology





10:15 am

Today's Forecast: Showers



10:17 am

Brainstorm



10:19 am

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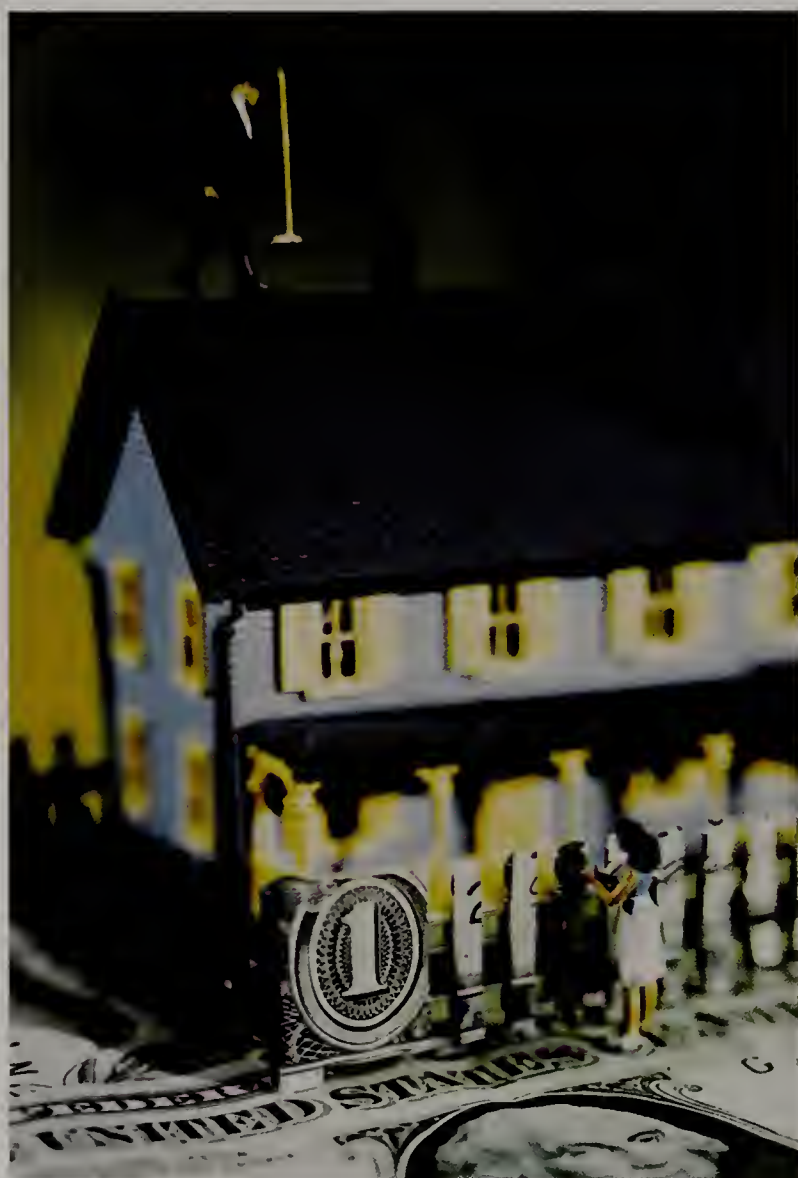
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PREDICTIONS

business-to-business e-commerce

Hey, Landlord!

CIOS WHO CAN'T GET their companies' business-to-business web efforts off the ground may soon find themselves calling on the local landlords. And, it won't be because they've lost their jobs and need to find cheaper digs. They'll be calling on "e-business landlords," a new category of e-business service provider that The Yankee Group predicts will develop over the next two years. Landlords, or hub service providers (HSPs), would offer both the technology and business services need-



ed to make business-to-business sites work, says Lisa Williams, program manager of business-to-business e-commerce at The Yankee Group in Boston. "A landlord makes partnerships that benefit all the tenants," Williams says. "Some of these will be software partnerships; some will be nontechnological partnerships."

On the technology side, landlords would likely provide tenants with network infrastructure, data storage, e-commerce software and systems integration. They may partner with other providers to offer these services, and their size will let them

strike favorable deals. Customers would reap the benefit of having all these services in one place. On the business side, landlords would likely offer financial and logistics services; they may even help arrange joint ventures among their tenants. Tenants could include traditional companies, large and small, as well as e-marketplace startups and other dotcoms.

Look for landlords to come from the ranks of procurement software vendors and infrastructure providers; big companies that have a lot of purchasing power and a well-known brand name may also get into the act. Within the next 18 to 24 months, large hub providers may emerge, most likely from well-known names in the technology industry. Given the soup-to-nuts scope of their offerings, the market probably does not have room for more than a half-dozen or so of these big players. —Sari Kalin

new products

roster needn't toss out their old electronic data interchange (EDI) systems just yet. **XMLSolutions Corp.** has released **XEDI** (pronounced "zee-dee") **Translator 1.0**, software that translates EDI documents into XML and vice versa. Using the software, any X12 and Edifact document can be translated into XML; that way, a company's trading partners need only a web browser and net connection to do business with them. Pricing, based on the number of trading partners, starts between \$5,000 and \$25,000. For more information, visit www.xmls.com or call 703 506-1111.

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GyroTools F/X software lets presenters add special effects to PowerPoint, Freelance and Windows applications. The suggested retail price is \$199.95. For more information, check out www.mindpath.com or call 800 615-1215.

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LIKE THE QUEST for the improved mousetrap or the bug-free operating system, the search for the ideal battery never ends. The latest entry in the better battery sweepstakes is Electrofuel's lithium-ion superpolymer technology, which the Toronto-based company claims will run a conventional notebook computer for up to 15 hours.

While conventional lithium-ion batteries offer about 250 to 270 watt-hours of power per liter, Electrofuel's technology raises the ante to an impressive 470 watt-hours per liter. The company was

able to achieve its breakthrough by using a patented battery technology and a proprietary manufacturing process. "Extended battery life is the holy grail for portable device vendors," says Rob Enderle, vice president for desktop and mobile technologies at Giga Information Group, a technology research company in Santa Clara, Calif. "The problem is making high-capacity batteries affordable and compact enough that people will want to buy them."

Flexible superpolymer chemistry allows Electrofuel to mold batteries into virtually

any size and shape. A power pack can be as small as a credit card to energize a mobile phone or as large as a briefcase to propel an electric car. The technology retains up to 95 percent of its charge after 30 days and doesn't suffer from the capacity-eroding "memory effect" that afflicts nickel-cadmium and other types of batteries when they are recharged before being fully depleted.

Electrofuel's first product is the notebook-computer-compatible PowerPad 160, which provides a 160 watt-hour capacity and a run-time of 16 hours. Priced at \$499, the two-pound unit attaches underneath a notebook's base, adding about an extra 3/8-inch of thickness to the system. The product connects through the AC adapter port, so the notebook thinks it's plugged into a wall socket. PowerPad 50, 100 and 200 models are scheduled for release later this year at prices ranging from \$199 to \$799.

Enderle believes that the pricing levels seem about right. Yet he also feels that Electrofuel's best chance for long-term success hinges on whether the company can cut licensing deals with portable device vendors. "Many corporate buyers simply won't purchase add-ons produced by an unknown vendor," he says. "It also makes a lot of sense to bundle the battery with a new product." An Electrofuel spokesman says the company is currently negotiating licensing deals with several manufacturers.

Electrofuel also envisions applications for its technology in the budding wearable computer field. Enderle also believes wearable computer customers would find moldable, high-capacity batteries very useful. "This could become a market niche for companies like Electrofuel," he says.

—John Edwards

"Extended battery life is the holy grail for portable device vendors."

—Rob Enderle, VP of desktop and mobile technologies, Giga Information Group

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Opinion

IN THIS SECTION

Difference Engine

Doug Barker 216

Reality Bytes

Meridith Levinson 222

Sound Off

Martha Heller 226

Platform

Dan Newsome 230

From the Publisher

Gary Beach 234

Difference Engine

The Social Impact of Technology

Turning Green

IT can help save the planet and increase profits at the same time

BY DOUG BARKER

IN TODAY'S BOOMING economy, it's easy to feel that all is right with the world. After all, according to the leading economic indicators, we're doing great. Many of us now have access to unprecedented amounts of information and money. Employment is up, and so is consumption.

But our traditional economic measures don't begin to tell the whole story. In our consumption-focused, sound-bite world, an age-old truth is often glossed over—that material well-being is not the end-all, but simply one of many means to the end. The real goal, most people would agree, is a happy, healthy and fulfilling life. Is a new DVD player required for that? Probably not. On the other hand, some very basic things *are* required,



such as good health, connections with others and a hospitable environment.

Unfortunately, our consuming lifestyles are fundamentally at odds with a number of these sustaining elements, especially the environment. Today, earth's ability to support life is seriously threatened by what we do. IT is partly to blame, but it can also be part of the solution. Will "www" increasingly stand for "world without wisdom?" That's up to us.

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Not a Pretty Picture

For most of the world, 1997, 1998 and 1999 were the three warmest years on record. This warming is at least partly the consequence of human behavior: Burning fossil fuels produces carbon dioxide and other gases that accumulate in our atmosphere, trapping the heat.

Currently the world is in its sixth major global extinction event. This one differs from the last—65 million years ago—in two ways. First, it is the direct result of human activity. And second, it is happening over decades rather than millions of years. Species of plants and animals are disappearing at 1,000 to 10,000 times the natural rate of extinction. Plants provide all our food, most of our medicine, clothing and shelter. They protect the topsoil, ensure the quality of drinking water and determine local climates. As many as 100,000 of today's esti-

Whereas the GDP has more than doubled in the United States since 1950, not so the GPI. It rose from 1950 to 1970, but has declined 45 percent since then. The rate of decline is accelerating too, with a 1 percent per capita decline per year in the 1970s, 2 percent in the 1980s and 6 percent in the 1990s.

The IT Connection

It's not a good situation, but it's not a hopeless one either. We *can* change course. It won't be easy, but it need not be marked by sacrifice or discomfort. We can live better with less cost by using smarter technologies that yield new heights of prosperity, health and connectedness.

IT has great potential to help create a new, improved world, but too much of its power is still focused on enabling us to consume more and do more dumb things faster. To achieve the promise of a better world assisted by IT and the internet revolution, we must seize the high ground.

A few months ago, The Nature Conservancy hosted a conference on the intersection of sustainability and information technology. The Conservancy is

the world's largest conservation organization, having protected more than 11 million acres of land in the United States and more than 70 million acres abroad. A number of ideas were discussed at the conference, including suggestions for how those of us in IT can help our companies move toward a more sustainable economy.

1. Use your strengths. Recognize that global sustainability requires a systems point of view—inputs, processes, outputs and interconnections among the various niches to keep the entire system in balance. Happily, this is one of the great strengths of the IT community. Our expertise in systematic thinking is precisely what is needed to help move us toward a

Too much of IT's power is still focused on enabling us to consume more and do more dumb things faster.

mated 300,000 species may be gone by 2050, because of compromised ecosystems.

On our current trajectory, as predicted by the Red Cross and substantiated by the best minds in science, climate change, environmental damage and population pressures will combine to make weather-related superdisasters the defining feature of our new century. Global warming will lead to flooding that may reclaim large portions of coastal cities such as New York.

Ecology Versus Economics

Economics, meanwhile, traditionally places very little value on the environment. All that registers on most balance sheets are the earth's exploitable resources, such as minerals and forests. But there are other, much larger things that the earth provides us—and businesses—for free, and these "ecosystem services" are seldom acknowledged. Examples include water storage and regulation of the climate. According to a report in the journal *Nature* last year, these services are conservatively estimated to be worth at least \$33 trillion a year. Even more important, there is no known substitute for them at any price, and we cannot live without them.

Yet we blindly continue to measure our success in terms of GDP, which does not even recognize these environmental services. An example of a more meaningful metric is the Genuine Progress Indicator (GPI), proposed by the public policy organization Redefining Progress (www.rprogress.org), which includes the contributions and costs of family, community and natural habitat, along with conventional production measures.

Further Reading

In the effort to create a sustainable future, there is a growing world of best practices to look to for inspiration:

Natural Capitalism: Creating the Next Industrial Revolution (Little Brown, 1999)—provides hundreds of examples of companies that have dramatically improved their bottom lines while solving environmental problems. Visit www.naturalcapitalism.org.

The Natural Step for Business: Wealth, Ecology and the Evolutionary Corporation (New Society Publishers, 1999)—offers an elegant framework for building enterprises that can prosper by operating in harmony with the natural environment. Visit www.naturalstep.org.

—D. Barker

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better future. Whole-system thinking, including using nature's model of closed-loop production systems, can pay handsome dividends.

For example, when chlorofluorocarbons (CFCs) and their destructive influence on our stratospheric ozone first gained attention several years ago, many industry executives screamed for more time to phase them out and warned of huge economic costs and consumer discomfort to transition to new substitutes. CFCs were critical to the manufacturing of circuit board assemblies. But amid all the fuss, some companies looked around for alternatives. Motorola began successfully using plant-based terpenes, based on a derivative of orange

It's time to dispel the myth that changing away from dirty old technologies means figuring out who should bear the costs. The more interesting question is, Who should get the profits?

peels. The natural cleaner proved more effective than the CFCs had been. Next, Motorola began to recycle rinse water from the system and reduced the cost of cleaning PC boards by 85 percent. Better still, Motorola used this as a stepping stone to redesigning products that don't require any cleaning during manufacturing. The end result? Superior products, less pollution and more profit.

IT can play a key role in finding and enabling profitable, sustainable solutions. Take a close look at your company's value chain and internal processes for areas where your reengineering skills and whole systems thinking could help redesign things for the better. It's time to dispel the myth that changing away from dirty old technologies means figuring out who should bear the costs. The more interesting question is, Who should get the profits?

2. Take a broader perspective. A growing number of companies, including Procter & Gamble, are embracing a bottom line that attempts to measure not just their corporate health but also what is good for the communities in which they operate. While environmental and social measures are still rudimentary and far from standardized, corporations are finding ways to chronicle their progress. Tellingly, according to a recent joint survey by Dow Jones and Sustainable Asset Management, the top 200 sustainable companies outperformed the rest of the pack, including technology and energy companies.

CIOs can be advocates for advancing knowledge management for these broader measures of success. They can help busi-

ness leaders broaden their view of what metrics they should be looking at and also expand their companies' systems so that they're capturing and reporting information that paints a fuller picture.

3. Focus on service. Information systems can help us transition our thinking toward a new business model that emphasizes meeting customers' needs rather than making and selling products. The book *Natural Capitalism: Creating the Next Industrial Revolution* (Little Brown, 1999) provides several inspiring examples.

For instance, United Technologies' Carrier division, the world's largest manufacturer of air conditioners, is shifting its mission from selling air conditioners to leasing comfort. Making its air conditioners more durable and efficient may compromise future equipment sales, but it provides what customers want and will pay for—better comfort at lower cost. Carrier will get paid to provide the agreed-upon level of comfort, however that's delivered.

Higher profits can come from providing better solutions rather than selling more product. CIOs can help by providing the necessary information infrastructure to facilitate this transition.

4. Listen and learn. Most major corporations have organizational units that focus on environmental concerns. Some leaders, such as P&G, have even reorganized their groups to incorporate all aspects of sustainability. Whatever the group is called at your company, invite its director out to lunch. Try to learn more about your company's environmental challenges and opportunities, and explore ways that IT can be part of improving things.

5. Help out. Last, but not least, lend your expertise to your favorite nonprofit. Don't let the IT revolution pass by the organizations that reflect the best parts of ourselves.

Now is a great time to bust out of old boxes, risk speaking and acting on the truth, be a leader, be thoughtful, be creative and be generous. Small visions don't serve us well. Let's make them big, bold and powerfully good—for ourselves, our families and communities, and for all life on our small, precious planet. **CIO**

Do you think IT can help save the world? Let us know at difference@cio.com. Doug Barker is vice president and CIO at The Nature Conservancy in Arlington, Va.





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Opinion Reality Bytes

A Cold Look at Hot Trends

Getting Personal

The privacy that erodes as a result of CIOs' technology choices could be their own

BY MERIDITH LEVINSON

WHY DID IT TAKE the web to make privacy, the inalienable right sanctified by the Fourth Amendment, a national issue? Why are people suddenly so concerned about safeguarding their personal information from companies that pay the highest bidder for it? Several factors have converged to cause this uproar and inspire contempt among consumers for businesses that engage in this controversial practice. But the real issue concerns the way the web forces consumers to reevaluate the notion of privacy. As a result of this raised awareness, CIOs must be more proactive in addressing this issue. They are in the best position to address consumers' privacy concerns because they decide which technologies to implement in pursuit of business goals. It's time for CIOs to think beyond the business value of technology and consider the effect of their technology decisions on privacy. If they don't, they could find that their companies are systematically eroding a constitutional right, all to make a buck. (See "You Know What They Did Last Night," Page 188.)

The internet is an extensive network of interconnected servers and databases that link private industry, universities, governments and individuals. The web makes this vast array of



resources readily available to anyone with a computer and an internet connection. Just think, where you once had to flip through musty card catalogs to find a book in your local library, you can now search for it from your computer. It's this network of databases containing people's driving, real estate and employment records (to name just a few) that has spawned an industry that taps into this information. In the old days, the curious or vengeful among us would have spent thousands of dollars to hire a private investigator to search public records. Now anyone with a modicum of curiosity and a penchant for voyeurism can play gumshoe on the cheap.

The fact that these databases are connected and that their contents are available via the web drives home a disturbing truth: Information we deem personal—our name, address, how much we paid for our home—is not private. This kind of information has never been private; before the web, it was just

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And nor are we the sole proprietors of our personal information. Companies traffic in this stuff the way that the Medellin drug cartel traffics in cocaine. If Company B buys your personal information from Company A, which originally obtained it through a purchase you made, does that mean Company B now owns this information? What right do you have to it? Indeed, companies selling or sharing people's personal information with so-called strategic partners has become a billion-dollar business, a competitive advantage and a new business model all at the same time. Venture capitalists pour obscene amounts of money into e-business plans that derive value from aggregating and sharing information about

The surveillance technologies that let companies track visitors' activity on the net are also increasing consumers' privacy concerns. Cookies, for instance, collect data on the links visitors use, how long they view pages and which ads they click through. Once a name is submitted on a site along with shipping or payment information, cookies can identify the shopper as an individual rather than a number.

This kind of technology allows companies to collect more than transactional purchase data. It allows them to capture a snapshot of people's interests and behavior. Companies can then use these snapshots to develop more complete and creepily accurate portraits of customers. True, retail stores can amass this caliber of information. But to do so, they have to employ

auditors disguised as shoppers who follow people around the store to see which products attract their attention. Or they can turn to surveillance cameras, which are used just as often to identify shoplifters.

Consumers are rightly waking up to reality: Whether browsing in a brick-and-mortar store or online, Big Brother is watching. As worries

about privacy increase, consumers realize that there is a high price to pay for convenience. Unless CIOs acknowledge the ethical questions surrounding the use of certain technologies—and address these issues with the rest of senior management—the backlash that has begun will only continue.

It's time to balance the scale. Companies know so much about us—from how long we spend browsing virtual shelves of vitamins to our preference for taking zinc rather than echinacea to prevent colds—while we know little about them. We don't know what they are really doing with our personal information, and the thought of a faceless company knowing us so intimately that it could predict our every caprice scares people. And it should scare CIOs as well. The CIO knows firsthand which technologies are on the market to aggregate customer information, how they work and how they tie into other systems. CIOs also know what companies do with this information. For these reasons, CIOs should be the ones who bring the social implications to the boardroom. After all, it's not just consumer privacy that's at stake; it's their own privacy too.

What bothers me most about the waning control over personal information on the web is my Orwellian suspicion that anonymous companies will usurp control of our lives and begin prescribing what we need and want. Indeed, they can dictate our life experience because they know too much about us. **CIO**

Do you think Staff Writer Meridith Levinson is a) a crazed libertarian b) a crazed socialist c) just plain nuts? E-mail her at mlevinson@cio.com.



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As the web gets more pervasive and personal information gets more valuable, the interests of corporate America and consumers will diverge.

prospective browsers and buyers. In the new economy, it's not what you sell, it's whom you sell.

Businesses are capitalizing on people's interests and attitudes. They tout one-to-one marketing relationships as if they valued customers as individuals, but what they really value is customers as revenue streams. As the web renders distinctions between what is public and what is private increasingly ambiguous, this ambiguity raises serious ethical questions about who has the right to personal information and if such information can actually be bought and owned.

Consumers have to be vigilant. They must choose privacy over convenience. They still hold some influence over businesses in that companies acknowledge consumers' privacy concerns by explicitly asking them for permission to share with partners the information they enter on websites. But consumers must be careful of losing this influence altogether. Why? Because by choosing convenience, they show corporate America their willingness to relinquish the intangible right to privacy for the tangible benefits of electronic commerce and services. One day, they might not have this choice.

Furthermore, as the web gets more pervasive and personal information gets more valuable, the interests of corporate America and consumers will diverge. Companies say they have the best interests of consumers in mind when aggregating and sharing this information with their partners. In turn, the partners may then send consumers advertisements about their products and services that they think may be of interest based on items consumers shopped for in the past. But all they really want is to sell to you.

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Why Does Everyone Hate the IS Department?

BY MARTHA HELLER

LET'S FACE IT. Most corporate users hate their IS staff. While a certain amount of mudslinging takes place among all departments in most organizations, the pile at the door of Information Systems is usually pretty high. Why?

Some IS managers see user ignorance and downright stubbornness as the source of the conflict. "We get constant calls about problems that we know for a fact we've explained to users time and time again," says Greg Merideth, director of MIS at Technology and Business Integrators, an IT consulting company. "Everyone wants to use their computers, but nobody is willing to learn how."

Merideth and his team have decided that after a certain age, users are simply incapable of grasping the basic concepts of computer operations. "Anyone over 46 we forget about," he says. "We literally won't even try."

Most users, on the other hand, will tell you that IS workers are slow to respond, insensitive to their deadlines, unable to translate computer-speak into English and, most important, unable (or unwilling) to keep their computers from crashing.

"Many IS organizations preserve this 'we're gods' attitude,"



says Sarah Douglas, professor of computer and information sciences at the University of Oregon. "Born of the hacker culture, IS workers are often resistant to working in teams, and they often don't give users proper training on the systems they impose on them. They just say, 'Here, use it.'"

The IT staffing shortage, and the exorbitant salaries it has created, Douglas argues, only fuels the fires of IS arrogance and the conflict between the department and its users.

But user stubbornness and IS arrogance can't tell the whole story? There must be something else behind the near universal antagonism between IS departments and their users. Why does everyone hate the IS department?

This thread began on Dec. 7, 1999, and as you can imagine, the opinions varied widely. Here is a sampling of the responses that Web Writer Martha Heller received. You can respond to her at mheller@cio.com or via comment.cio.com.

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I DON'T FEEL THAT HATE IS THE APPROPRIATE DESCRIPTION of how most users feel about their IS departments. A more accurate description may be frustration. They are frustrated by both a lack of communication and perceived slow response to their problems. Users rarely have any understanding of the workload of the IS department, where they fit in the priority of systems supported or whether their problem results in diminished job performance versus complete work stoppage. There should be and often are alternative methods to accomplish the work during problem periods that are less efficient but still allow work to continue.

How's your IS department?

Want to sound off on this or other topics? Join the ongoing debates at comment.cio.com.

I feel more effort must be made on both sides, especially to communicate company priorities, system priorities, IS workload and the business impact of diminished performance or system unavailability. Users must look at the organization the same way that IS is expected to—as a whole—and not just at their particular problem but where that problem fits into the system and company priorities across the entire organization.

Dave Charboneau

*Vice President, Information Technology
American Multi-Cinema Inc.
dcharboneau@amctheaters.com*

ONE OF THE REASONS FOR THIS DICHOTOMY IS THE result of building a system that doesn't meet client requirements. Remember, the user is king. The user's ability to use an interface effectively is a critical success factor that should be given a high priority. Otherwise we will run into trouble.

John Caiafa

*Director of Information Technology
Dun & Bradstreet*

ONCE UPON A TIME, THE INFORMATION TECHNOLOGY group dictated to the user community what could be done, how it could be done and when it could be done. The reason? Technology was in the very infant stage—not very adaptable or maneuverable. IT became a formidable roadblock for many entrepreneurial business people. IS people did not understand the business need, nor did business people understand the issues associated with information technology at its infancy stage.

Thankfully, times have changed. Now business runs IT. Now

IT is the business—there couldn't be a business without IT. I personally think a very small group of traditional people in IT causes a small group of business-operations people to hate IT.

John Panicker

*Vice President and CIO
Arbitron
john.panicker@arbitron.com*

THERE ARE ELEMENTS OF TRUTH IN THE CONCEPT that IS/IT departments are disliked by the client community. However, there are ways of breaking the cycle of misunderstanding that breeds dislike. Basically, the IS/IT Division is a support group with a mission to assist the "line" units in the use of automation as a work tool. If the IS/IT department personnel are allowed to disregard classes of workers because of their age then the depersonalization of those we are employed to support will breed contempt.

We need effective leadership where communication is a prized commodity and rewarded accordingly. However, don't expect the communication lines to be linked at the bottom of the work groups if the senior managers are not talking.

Communication up and down the work continuum is a prerequisite to understanding the constraints and frustrations of both the support and line groups. If there is dislike among line workers for the support workers then look to the highest levels of management and see if communication is happening there. If not, you have spotted the root of the problem.

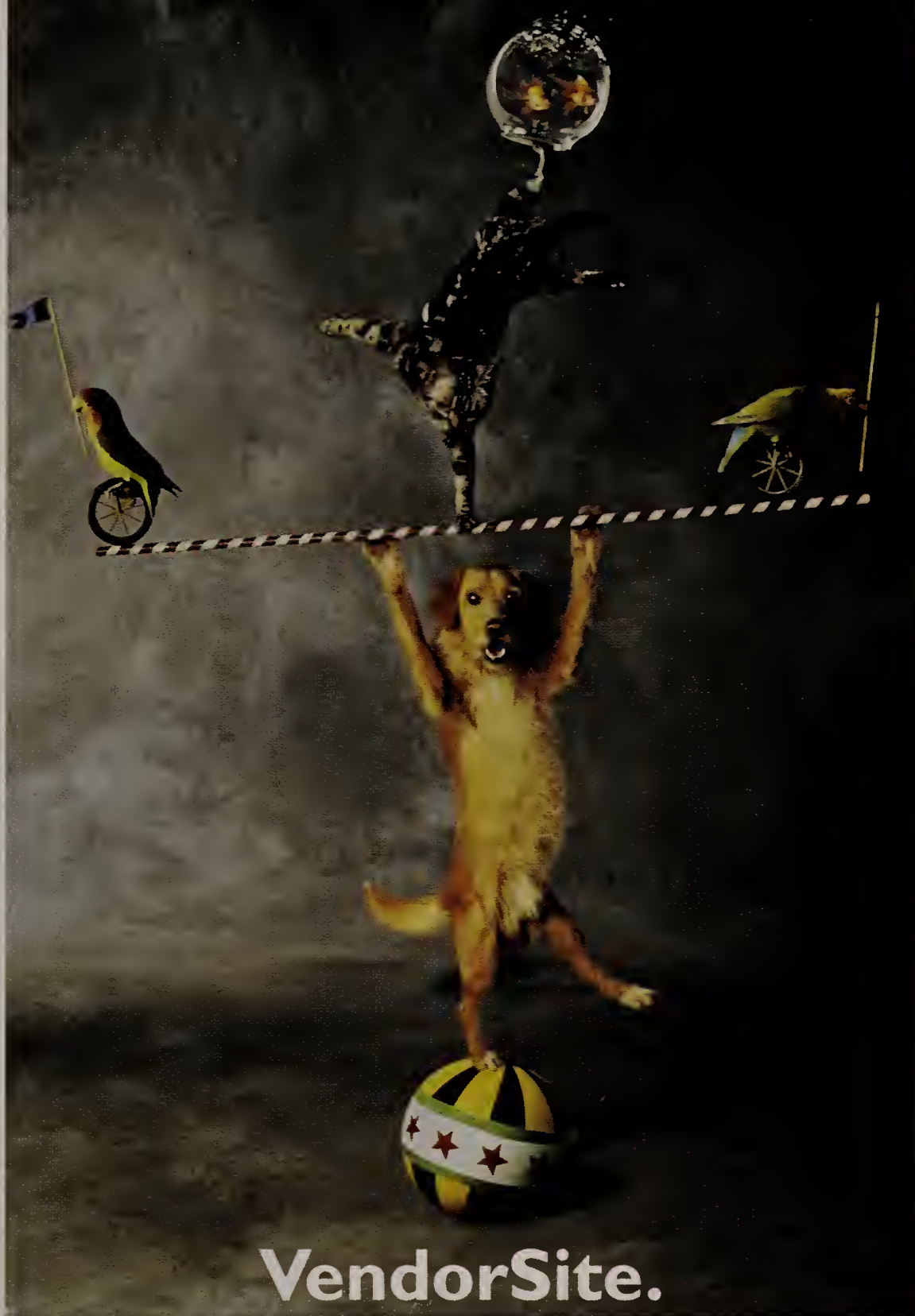
Howard A. Baker

*Deputy Commissioner—CIO
NYPD
hbaker@nypd.org*

IT DOESN'T REALLY MATTER WHETHER END USERS have unreasonable expectations, or whether the IS community fails to meet reasonable demands. Every IS department is an internal service provider and as such has those expectations to manage. In addition to developing relationships with our users and making sure that expectations are defined and understood by everyone, we have the responsibility either to produce systems which are intuitively easy to use or be prepared to spend a great deal of time providing support. In other words, pay heavily for a short time on the front end or pay continuously on the back end. As corporate customers of our service, end users have every right to expect complete and continuous support from IS. The corporation also has a right to seek alternatives if that support and service is not consistently delivered.

Danny Shaw

*CKO
Children's Hospital, Boston
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Virtual Success

BY DAN NEWSOME

I'M A 22-YEAR-OLD CHIEF technology officer of a pre-IPO company that specializes in software and web applications for the oil and gas industry. Like most people, each morning I wake up, shower, brush my teeth and head to the office. But I don't have to go far; my office is just a few steps away from my bedroom. Part of what's interesting about my story is my age—there aren't a lot of CTOs out there who've only been old enough to buy beer for a year. But the other part is how my company has managed to succeed and thrive within a virtual model.

At age 17, I knew I wanted to pursue technology. After graduating from high school, I moved to Seattle. I schemed, begged and self-crash-coursed my way into a few interviews at Microsoft.

"What are you looking for in a job?" my vested and cocky interviewer asked.

"Long hours, low pay. A chance to prove myself," I answered. I had myself a job.

I was a tester on one of the foreign language versions of Visual Basic, and after only a few months, realized that I had

gotten myself in way over my head, but that I would never be fired. It was 1994, the beginning of the technological boom, and it became obvious that anyone with coding ability would be in high demand for a long time.

I left Microsoft after I decided that free cappuccino didn't make up for long hours, low pay, stress and bad wine tasting parties. I wanted to be something besides a tester.

After I left, I returned to Denver and took on a string of contract positions, not at all uncommon in today's dynamic workforce. Big teams, small teams, high stress, low stress, big companies, small companies, I tried a few of each. I coded in every language, every platform, every environment possible. In time I found that I preferred small to midsize companies, new development and a significant say in how things were going to be done. To make a long story short, I became part of a three-man team that built an application that would save



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the small petroleum company we were working for hundreds of thousands of dollars per year.

We rolled out our package to the 50-or-so person company. But a few days later the company announced a merger and declared its intention to lay off the team members. It was utterly devastating news to the three of us who had put our hearts and souls into a great software package.

But all was not lost. Acting quickly, Andy Wolfe, one of the team members, traded some of his severance for rights to resell the package. With some modification, we could have a small niche of the petroleum software market. We each put in every last penny to our name: about \$100 from me (give me a break,

and you can have it if we go out of business, we said. Your technology is immature compared with that of your competitors, they said. Buy in now, we said, and we will put all of your recommendations in our next version. You can't support your package with only two people, they said. Why not? The company phone number is in my home office. And believe it or not, I answer the phone whenever it rings, so perhaps all aspects of the virtual are not ideal.

But where does this leave our bottom line? I have heard the cost of equipment, floor space and phone estimated anywhere from \$7,000 to \$22,000 per employee per year. Of course this figure is different for every company, but even at the low end

the cost savings is clear. It doesn't take an accountant to see that with 10 employees, five years down the road, we will preserve a significant amount of capital. US West, one of the largest employers in Colorado, says it has almost 16,000 workers who telecommute regularly.

The trend is certainly gaining momentum,

even with lawmakers. An initiative introduced in the Colorado legislature this year offers incentives to businesses who allow telecommuting based on the number of miles the employees don't drive.

Since going virtual, my perspective on work has changed drastically. Gone are the days I sat counting the minutes until 5 p.m. My virtual workday is productive, fun, flexible and always a little bit different. The commute has been replaced by morning ritual. My wife and I wake up every morning and sip coffee while watching the morning news. The three o'clock doldrums are replaced by popping the laptop out of the port replicator and walking down to the local coffee shop for a soy latte. The commute home is replaced by cooking dinner, catching up on personal letters or an extra half-hour of work. At five o'clock, I begin to hear the honks, squeals and hum of the commuters—I am so glad I'm not among them.

There is no longer such a thing as company time. Personal and professional become like two halves of life, essential to one another. I have yet to call in sick in three years. To me, the virtual office is the synthesis between happy employees and maximum profits. Perhaps after we usher in the new virtual workplace, I'll one day tell my kids that once upon a time people left their houses to go work in big buildings. I'll tell them about traffic jams, sick-building syndrome, micro-management and cubicles. They'll stare at me wide-eyed in disbelief. **CIO**



Looking for a platform for your ideas? Reach us at platform@cio.com. Dan Newsome is VP of software development/CTO for Exigent Information Solutions.

Since going virtual, my perspective on work has changed drastically. Gone are the days I sat counting the minutes until 5 p.m.

I was 19) and several thousand from him (he was in his 40s). Exigent Information Solutions was born.

Since we didn't want to sell our souls to VC, or take out mega-loans, we had to be very careful with our money; and since we were in the conservative and traditional business of petroleum we had to be very careful with our image. The software business is forgiving and innovative; the petroleum industry is not. The technology to do day-to-day business at home was available and for the most part reliable, and after careful analysis (Andy is also an accountant; nothing we do happens without careful financial scrutiny) we decided that some serious cost savings were possible with a virtual organization. So we decided to build one.

We set up a P.O. box, business phone lines, cellular, a website and e-mail. To this day, these simple things make up the core of our communication. It's Ockham's razor, applied to our business model. Under pressure we learned that with a reliable laptop, cell phone and internet connection, anything is possible. We travel very little since most of our service can be done remotely, and we work out of our homes, wherever those may be. Our company began in the Denver area, but we now have employees, contractors and advisors from New York City to Seattle, and customers all over the world.

Despite how much we believed in our concept, we were criticized early and often for our virtual structure by potential customers, industry analysts and competitors. We learned to counter the negative with the positive. Your company is too small, they said. We are efficient, our technology isn't cumbersome and neither is our company, we said. You might go out of business, they said. We will place our code in escrow

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Opinion From the Publisher

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A New Mandate

IN SPRING 1997, I was on a global speaking tour. Much of the content I used on the tour came from the research firm IDC (a sister company to CIO). A key 1997 IDC prediction that caught the attention of my audience was that by the year 2000, shipments of internet access devices would dwarf shipments of personal computers.

I had not thought of that IDC prediction until I recently had an intriguing visit with Michael Capellas, president and CEO (and former CIO) of Compaq, prior to his Windows 2000 Expo keynote in San Francisco.

During his speech, Capellas took a page from IDC's prediction when he said, "The market will not be talking about personal computers for very long." Before his keynote, Compaq marketing people distributed material about a new computing device they call the iPaq. The term personal computer appeared nowhere in the descriptive piece. Skeptics will say this was a Compaq marketing strategy designed to distance the company from a market segment where success has been elusive in recent years. If the iPaq looks like a PC and is configured like a PC (more or less), it must be a PC, right? That string of questions, however, is irrelevant.

What is relevant is this: In the not so distant future, CIOs will not be talking about PCs, correctly fulfilling Capellas' prediction. In an era of just-in-time information where a company's infrastructure will be the face of its brand to customers,



Gary J. Beach

the four areas CIOs *will be* talking about are bandwidth, storage, reliability and services. Remember those words.

Do you have enough bandwidth to enable the intranet, extranet and internet applications you will need to remain competitive? Storage is not about storing information; it is about retrieving it. What's your storage strategy? Do you even have one?

The most interesting aspect of watching the year 2000 arrive was viewing its reception in 24 time zones. In this coming age of global e-business, a 24/7 reliability strategy is digitally myopic. To compete, the new mantra is 24/24/7. Who are your strategic partners? To perform at the level you must, you cannot do it all alone. Picking the right services partners could be the most important decision you make in the coming days.

For the foreseeable future, the world of the CIO will beat to the four-part rhythm of bandwidth, storage, reliability and services.

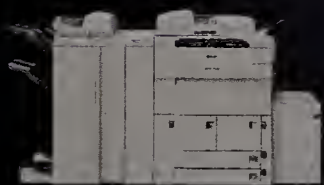
So what about PCs? They'll still be around. But the term personal computer will become less and less relevant to CIOs and their business strategy. By the end of 2001, what we know as personal computers will be marketed *free* to CIOs as front-end information access devices for bandwidth, storage, reliability and services.

It may happen even sooner. What are your thoughts? Let me know at gbeach@cio.com.

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Continued from Page 239

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Company Index

Acord.com54
 Adcon Telemetry Inc.32
 Agilent Technologies140
 Ajaxo Inc.200
 Amazon.com Anywhere200
 American Cancer Society32
 Andersen Consulting108, 166
 AppNet Inc.76
 AT&T140
 AvantGo Inc.200
 Bell Atlantic Telecommunications188
 Bell Canada140
 Bessemer Venture Partners76
 Best Software140
 Black & Veatch108
 Black & Veatch Solutions Group108
 Blue Nile Inc.76
 Bowstreet54
 Branders.com140
 Cadmus Communications Corp.166
 Capital Blue Cross32
 CarsDirect.com76
 Catalyst32
 CD Universe188
 Child Health Corporation of America108
 Christian & Timbers140
 Clairvoyant Software Inc.200
 Clorox Co., The140
 Compaq Computer Corp.178
 Compass America Inc.32
 Compass Management Consulting Ltd. ...32
 Comtesse Delphine de Grasse32
 Conoco Inc.32
 Convergence Corp.200
 Corning Inc.178
 DHL International Ltd.140
 Dickstein Shapiro Morin & Oshinsky LLP 158
 Digital Equipment Corp.178
 Dynamic Diagrams Inc.166
 Dynamic Mobile Data200
 Energy America LLC200
 Epicentric Inc.124
 Ernst & Young LLP124
 European Association for Research in
 Legged Robots32
 Exigent Information Solutions LLC230
 General Motors108
 GetThere.com200

Giga Information Group108, 200
 GTE Corp.140
 Halbrecht Lieberman Associates76
 Hartford Technology Services Co.108
 Herschel Shosteck Associates Ltd.200
 Hubbard Ross LLC32
 Hummingbird Communications Inc.158
 IBM Corp.200
 IDC200
 Idealab76
 Infocast Ltd.200
 Jordan Evans Group140
 Kleiner Perkins76
 Korn Ferry International60, 76
 KPMG International124
 Lotus Development Corp.200
 Matsushita Electric Industrial Co.32
 Maytag Corp.98
 Metafilmics32
 Microsoft Corp.124
 Motorola124, 200, 216
 Nature Conservancy, The216
 Netscape166
 NetSpeedConsulting140
 Nielsen Norman Group124
 Nokia200
 Optical Coating Laboratory Inc.200
 Oracle Corp.200
 Pacific Gas and Electric Co.76
 Park Electrochemical Corp.32
 PayMyBills.com76
 Personal Electronics Concealment LLC ..200
 Platform230
 PRI Automation178
 PricewaterhouseCoopers124, 188
 Private Healthcare Systems Inc.32
 Procter & Gamble216
 Respironics Inc.178
 RHI Consulting32
 Root Learning Inc.166
 RosettaNet54
 Royal Dutch/Shell Group108
 RSL Communications Ltd.32
 Sapien Corp.32
 Saturn Corp.98
 Seiko98
 Sephora200
 Sightsound.com32
 Starbucks Corp.32
 State Street Global Advisors32
 Structsoft Inc.200
 Structured Technology Group Inc.200
 Tech Data Corp.140
 TRUSTe188

Continued on Page 244



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Index

Continued from Page 243

Unisource Networking Services Inc.	248
United Technologies Corp.	216
Universal Studios	140
Visible Systems Corp.	200
Weather.com	200
Western Digital Corp.	98
Xerox Corp.	68
Yankee Group, The	200

Advertiser Index

ABT Corp.	147
Accessline Communications	C2
Acuent Inc.	176
Agilent Technologies	203
Ajilon	155
Allaire Corp.	26
American Power Conversion	65
Argus Systems Group	106
Asera	169
Attachmate Corp.	41
Autonomy Inc.	47
AVT/Rightfax	55
BackWeb Technologies	79
BEA Systems	44
BMC Software	171
Broadvision	129
Canon USA Inc.	235
Chainlink Technologies	61
Check Point Software	81
Chordiant Software	237
CIO Communications Inc.	72, 121, 153, 153A, 238
Citrix Systems Inc.	C3
Clarus Corp.	113
Cognos Inc.	131
Compaq Computer Corp.	2, 38, 163
CompUSA	127
Computer Associates Intl. Inc.	7, 74
Content Technologies	69
Corio Inc.	11
Datum Inc.	137
Digex	231
Digital Focus	71
Ernst & Young LLP	29
Eventra	229
Evolve Software	52
eXcelon Corp.	173, 175
EXE Technologies	87
Extraprise	213
Globix	191
Great Plains Software	25
HNC	8
IBM Corp.	133
Iconixx	145
Ikon Office Solution	215
Informix Software Inc.	245
infoUSA	19
InfoVista Corp.	183
Intel Corp.	84
Intentia	193

Intria Corp.	233
IT-Radar.com	201
Kingston Technology	C4
Linuxcare Inc.	122
LipStream	164
Lotus Development Corp.	223
Lucent Technologies	4
Mapics Inc.	135
MCI Worldcom	83
Mercury Interactive	37
Microsoft	121A
Mincom Media	181
NCR Corp.	138
net-HOPPER Systems Inc.	247
NetScout Systems Inc.	219
Network Appliance	49
Network+Interop	242
Nextel Communications	117
Ninth House Network	89
Nortel	12
Novell	20, 63
ObjectSpace Inc.	156
Open Market Inc.	211
Opus 360	43
Oracle Corp.	15
Orderfusion	30
Osprey Systems	187
PENgroup.com	239, 241, 243
Peregrine Systems	143
Predictive Systems Inc.	51
Resonate Inc.	91
RewardsPlus	205
Robert Half	73
Royal Blue Technologies	197
SAGA Software Inc.	227
Samsung	209
SAS Institute Inc.	33, 151
Satyam	225
Secure Computing Corp.	58
Segue Software	96
Sequoia Systems Inc.	195
Shaw Pittman	101
Silverline Technologies	115
SiteSmith	66
Skills Village	240
Software Instruments	199
Solomon Software	185
Spaceworks Inc.	93
Sprint	207
Sterling Software	119
SurfControl	221
Symantec Corp.	105
Talisma	103
Technical Resource Connection	111
Unisys Corp.	23
UUNET	35
VerticalSuite	95
Vialink	16
Work Management Solutions	57
WRQ Inc.	148
Zantaz.com	161
Zonetrader.com	217

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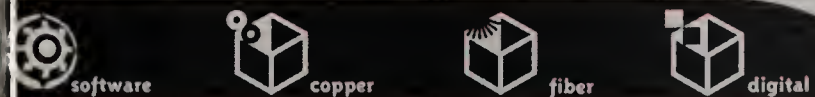
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Interview

BY POLLY SCHNEIDER

sheila TALTON

In 1986 Sheila Talton founded Unisource Networking Services, a Chicago-based telecommunications and networking consulting firm. When not meeting with Fortune 500 clients, she is active in several advocacy and networking groups that help advance women and minorities in business and high-tech.

CIO: What do you think accounts for the low percentages of women and minorities in senior IT jobs?

TALTON: Most people in senior executive positions have been mentored by someone within their organization who has promoted them. Most senior executives are men, and men are still uncomfortable mentoring women. Overall, people tend to befriend people who are like them. But it's more deeply rooted than workplace [dynamics]. (See "Equity?" *CIO*, Jan. 15, 2000.)

Traditionally women and minorities have not pursued education in computer science, engineering and math. That's because kids still don't get the broad

picture of what it means to have a career in technology. They think you have to be a gee-whiz genius to be in the industry, when there's a wide spectrum of what you can do. We don't do a good enough job of explaining that.

What helped you in your career?

Very early in my career I thought if you worked hard and were really good at what you did, the rest took care of itself. But what's truly important are relationships with people who can be your supporters. In this industry the boys still very much stick together. So, I've been fortunate to have had some male mentors; it really has helped me. There's clearly a lot of value in someone taking you under their wing and helping you develop. Hopefully you'll have in each position someone who is developing you for the next. You can't progress in your company,

let alone in your career, without that.

Could corporations do more to foster diversity?

What I find interesting is that you have large companies like Sun and Oracle and HP all creating application development shops in India and Korea and third world countries—yet the same level of capital investment is not going into urban areas here, where investment could create vocational schools, for example. That's a big missed opportunity for all of us. I think it would be worthwhile for our government to put programs in place to encourage companies to make that level of investment at home. We're in a global economy, and we compete globally. We can't afford to not make use of all our potential workforce. **CIO**

Tell us about your mentoring experiences at interview@cio.com.



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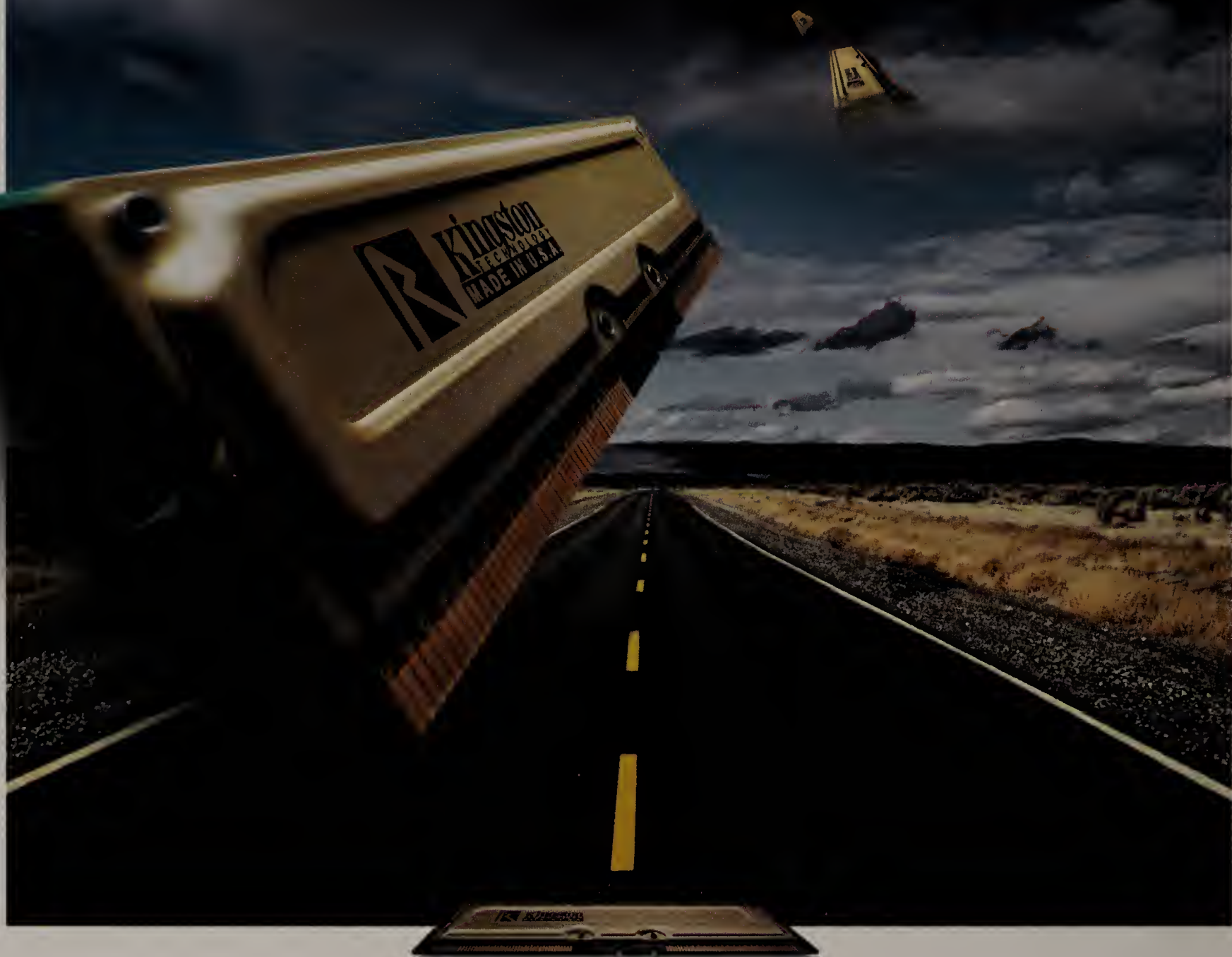
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